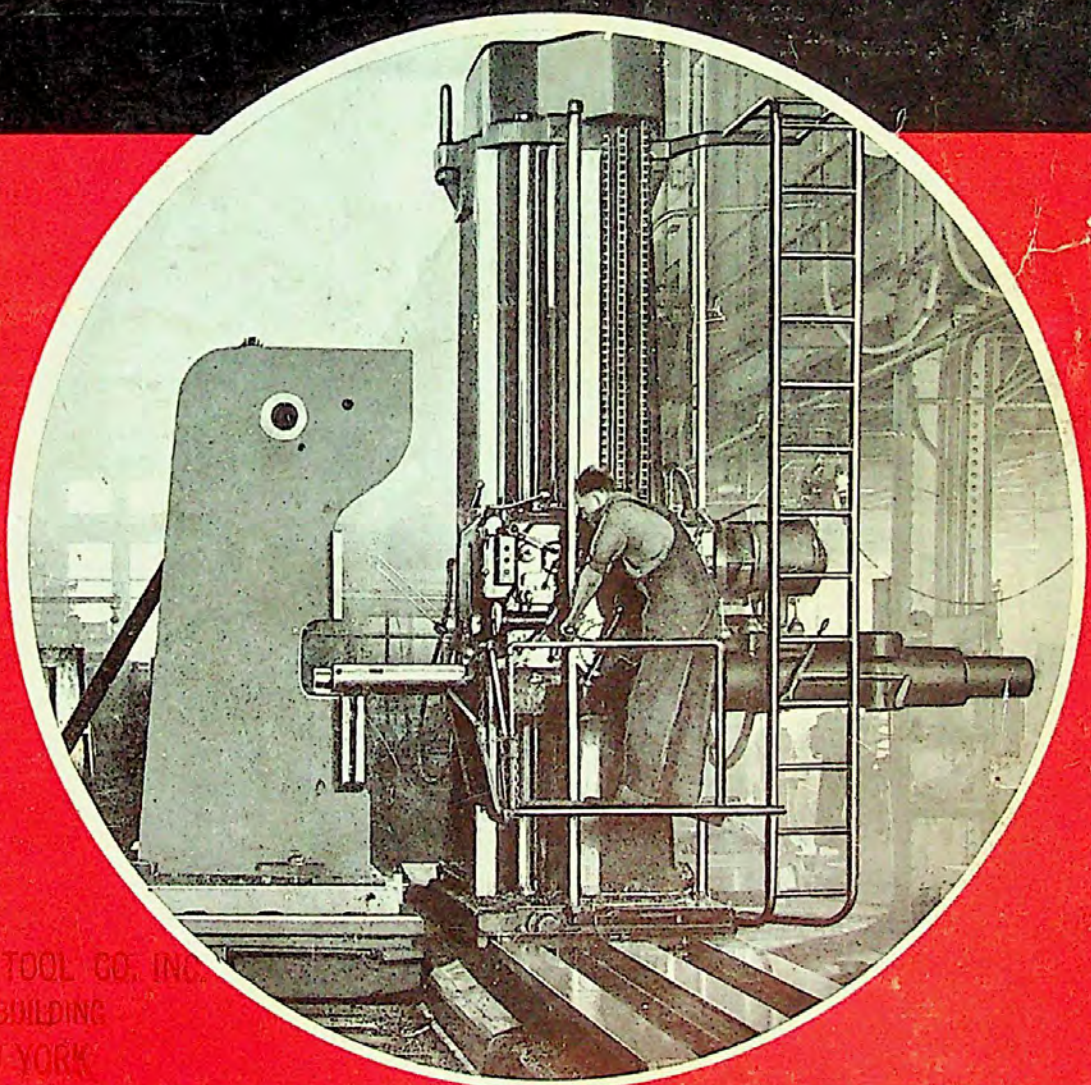
HIGH POWER.. PRECISION.. HORIZONTAL BORING, DRILLING AND MILLING MACHINES

TABLE TYPE

FLOOR TYPE

PLANER TYPE

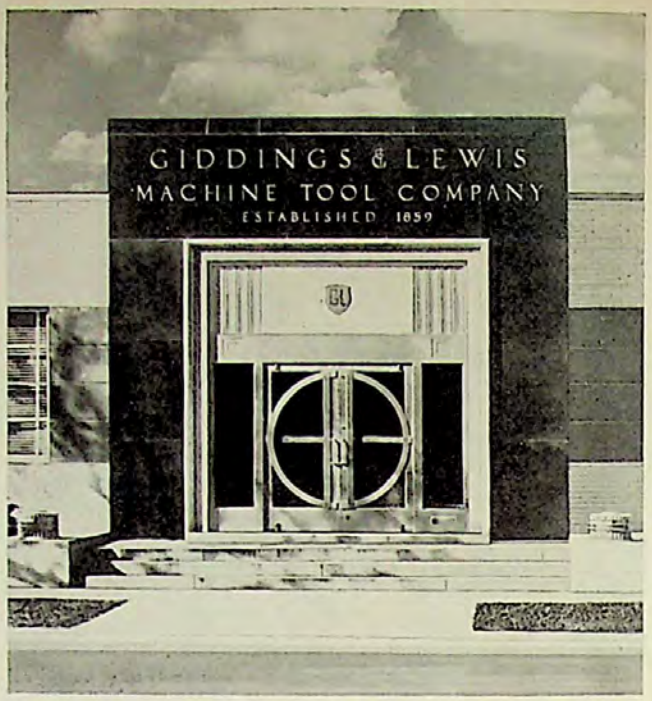
MULTIPLE HEAD TYPE



GIDDINGS & LEWIS MACHINE TOOL COMPANY
FOND DU LAC, WISCONSIN, U.S.A.

GIDDINGS & LEWIS MACHINE TOOL CO.

FOND DU LAC, WISCONSIN



In presenting to the trade this condensed catalog of equipment, we are endeavoring to place in the hands of all users of Horizontal Boring, Drilling and Milling Machines a resume of some of the principal features and the major specifications of the wide range of machines and accessories manufactured by Giddings & Lewis Machine Tool Company of Fond du Lac, Wisconsin.

This company is today, and has been for a great many years, the world's largest builders of High Power, Precision Horizontal Boring, Drilling and Milling Machines. We are the only builders today who are manufacturing a complete line of equipment and accessories. Three large plants, modern in every respect, are devoted exclusively to the building of Table Type, Floor Type, Planer Type and Multiple Head Type Horizontal Boring, Drilling and Milling Machines with main boring spindles from 2½" in diameter to 8" in diameter inclusive.

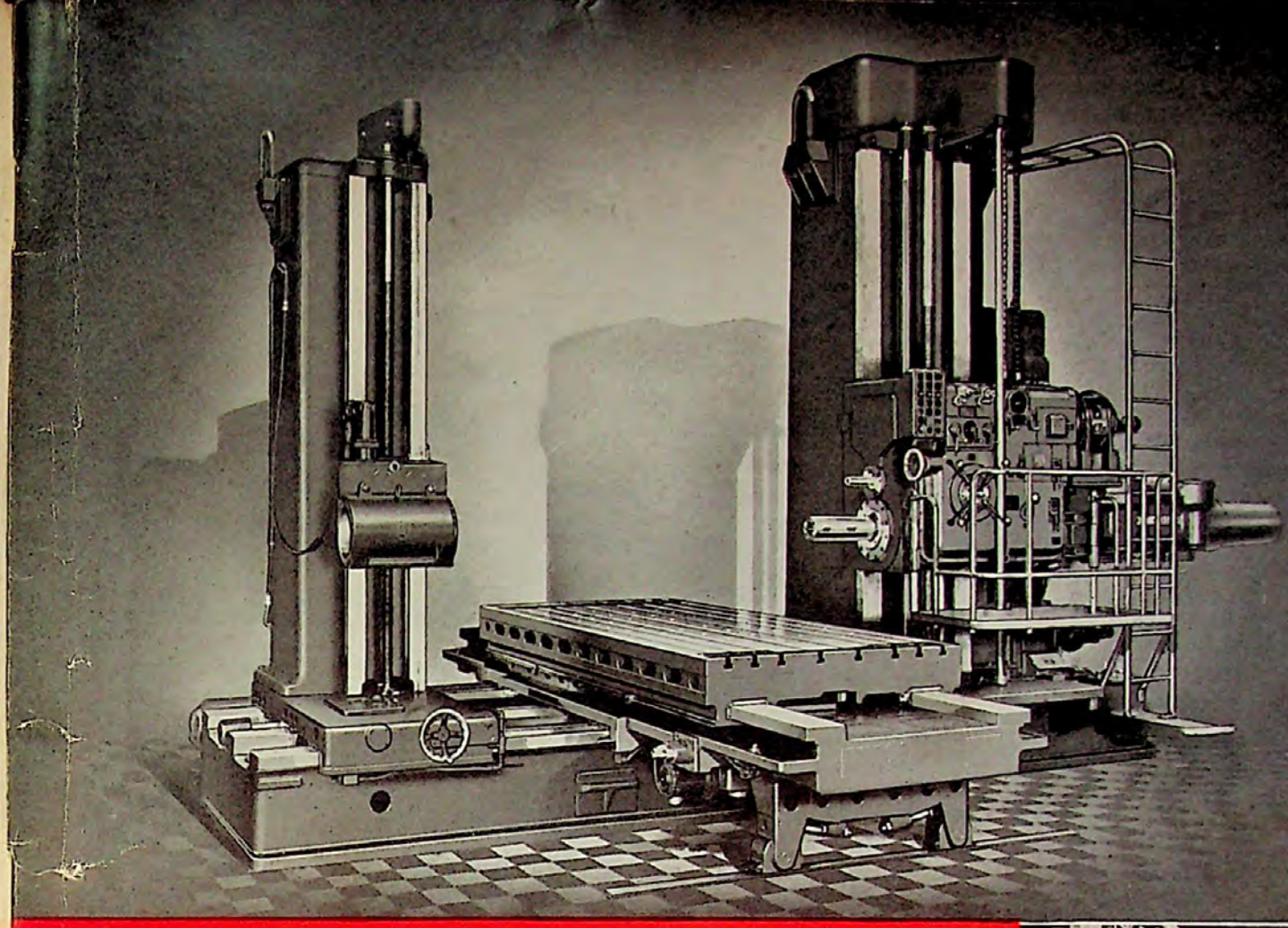
Our entire personnel is highly trained in the design and building of precision equipment and this, coupled with the fact that we are concentrating all of our efforts on the one type of equipment, insures the user that he will obtain a superior product of the latest design and fabricated to limits of precision that will meet the utmost requirements.

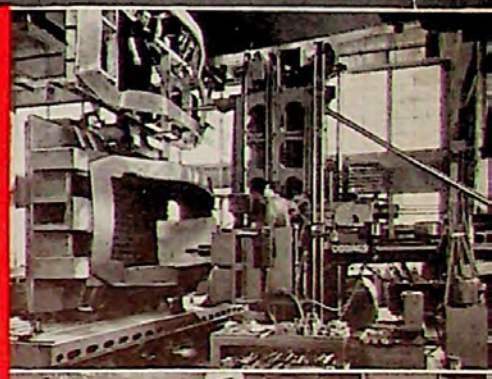
Giddings & Lewis Machine Tool Company's High Power, Precision Horizontal Boring, Drilling and Milling Machines are designed and built to perform a wide variety of operations on innumerable parts with maximum efficiency and economy. Among the many products which depend upon Giddings & Lewis machines for a score or more of operations are machine tools, electrical equipment, Diesel, gasoline and steam engines, railroad equipment, naval and merchant vessels, Army and Navy material, tools and dies, automotive, aviation, truck and tractor equipment, hydraulic and steam turbines, chemical equipment, agricultural machinery, road building and excavating equipment, food processing machinery, can and bottle making machinery, paper making machines, printing presses and print shop equipment, pumps, and steel mill and mining machinery. Various sizes and types of Giddings & Lewis Machines are used in U. S. Arsenals and Navy Yards and on board ship for building and servicing all kinds of military equipment.

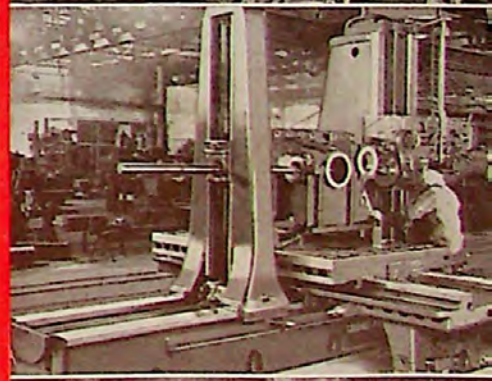
The machines illustrated and described in this catalog are fully protected by U. S. and foreign patents, patents pending and applied for.

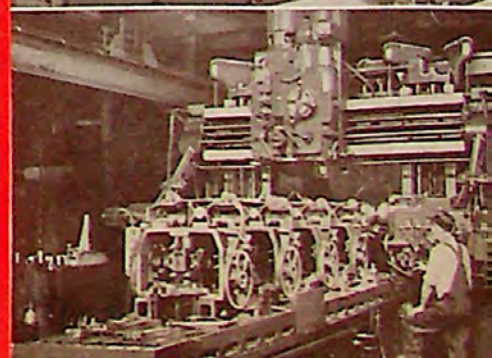
The illustrations and specifications published in this catalog are not binding in detail as we reserve the right to make additional improvements and incorporate them in the machines as conditions warrant.

INDEX









Above is illustrated our latest development of a large table type machine fully electrically controlled through stationary and remote control panels. Machine illustrated above has 7" diameter main spindle, 2½" diameter high-speed auxiliary spindle (a G & L feature). Space required is approximately 25' x 20' x 18' high. Approximate weight 155,000 lbs.

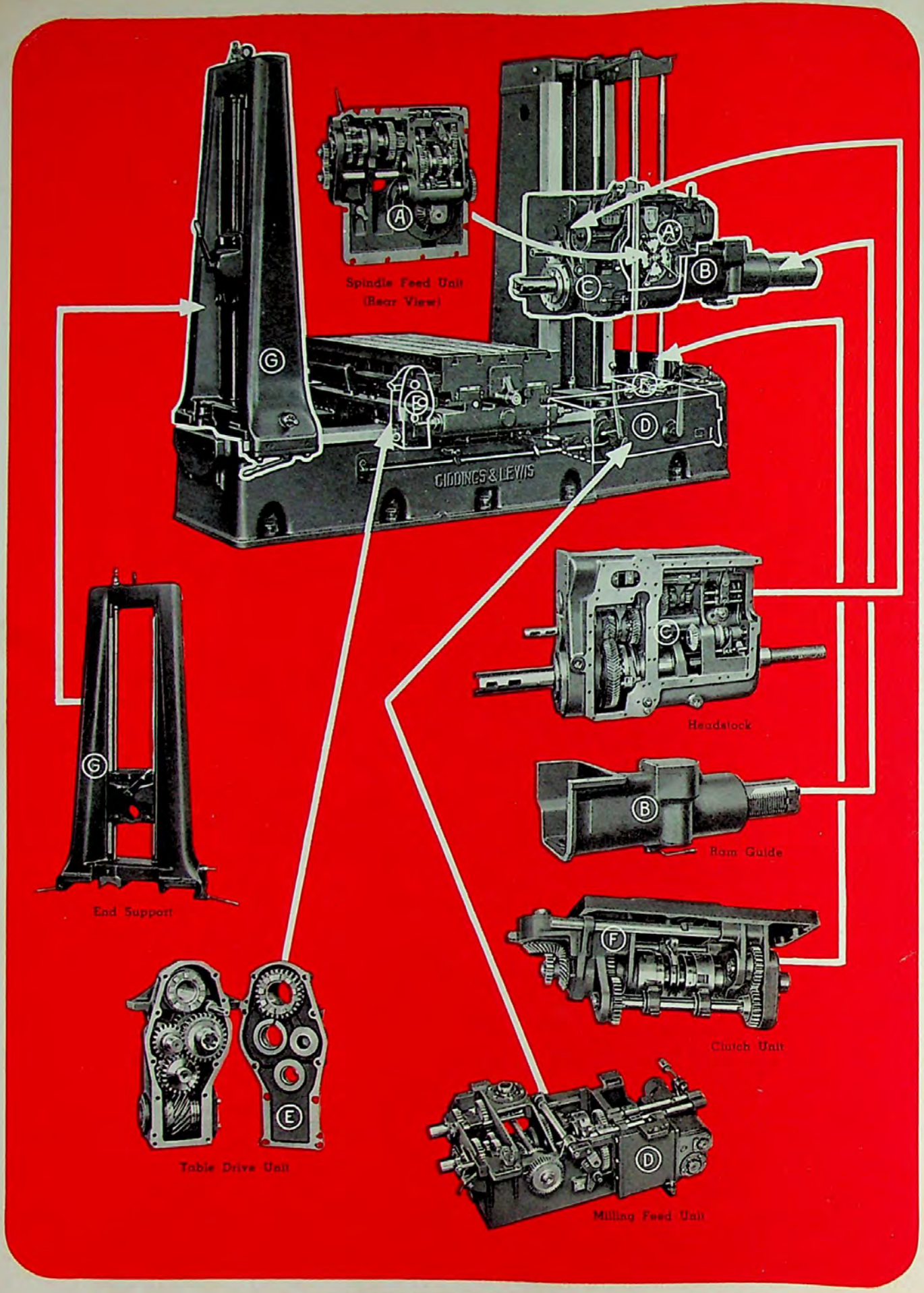
A few typical G & L installations are illustrated at the right.

Top right — One of our largest Planer type machines with an 8" diameter Main Spindle and a 3½" diameter high speed auxiliary spindle. The machine is approximately 22' in height, 40' in length and 16' wide —it weighs approximately 220,000 lbs. The particular operation shown is the milling of a large 40 ton automotive die. Independent Operation of Units and Directional Control (exclusive G & L features) are particularly important in this operation.

Center — One of our most popular table type machines—installed in the plant of a large general manufacturing concern. The machine has a 5" diameter main spindle and a 2" diameter high-speed spindle. Height of machine 12', length 16', width 12' — weight 46,000 lbs. The job illustrated is a precision boring operation on a large Gear case.

Bottom right — A Giddings & Lewis Multiple Head Planer Type machine with two horizontal and one vertical headstock. On the job shown, the machine performs milling, boring, counterboring, drilling and facing operations on several pieces in one set up. The machine is installed in the plant of a large mining machinery manufacturer.

The machine has 3½" diameter main spindles and 9½" diameter adjustable quills (G & L feature) and is known as a No. 340-PQ3H. Height of machine 16', length 35', width 18', weight 100,000 lbs.


Spindle Feed Unit
(Rear View)
GIDDINGS & LEWIS
Headstock
Ram Guide
End Support
Clutch Unit
Table Drive Unit
Milling Feed Unit

UNIT CONSTRUCTION Assures Easy Accessibility

HEADSTOCK UNIT

This unit is carefully scraped to the column, and guides on and is gibbed to both ways. A nine speed box and two sets of back gears provide the 36 spindle speeds in geometric progression to either spindle. Anti-friction bearings are used throughout and a power driven pump provides adequate oil to all gears and bearings and to all sliding surfaces.

SPINDLE FEED UNIT

A nine speed box and a set of back-gears provide 18 separate feeds in geometric progression to each spindle. The pair of gears at the extreme left of the unit may be changed easily to provide a different feed range or leads for taps. Flood lubrication is provided from a power driven pump in the headstock. All bearings are anti-friction, and multiple splined shafts are used throughout in place of loose keys.

RAM GUIDE

This unit bolts to the rear end of the headstock and carries the spindle ram and its feed and clamp mechanism. All bearings are adequately oiled through a line from the headstock pump.

TABLE DRIVE UNIT

This is mounted through the center of the saddle and transmits power from the milling feed unit to the table. The spiral gear at the lower end of the unit slides along a multiple spline shaft mounted between the bedways. Forward and reverse clutches in the unit allow independent reversal of the table. Pressure lubrication is provided from a power driven pump mounted in the saddle.

END SUPPORT

This unit is of exceptionally heavy design and construction so as to adequately support boring bars and maintain them in alignment. By the use of matched screws for the headstock and bearing block elevation, close alignment is maintained in all positions. An easily accessible adjustment is provided on the bearing block screw. A reservoir built into the block provides oil for the vertical ways and the boring bar bushing. One bushing is furnished with each machine and has the same inside diameter as the machine bar.

CLUTCH UNIT

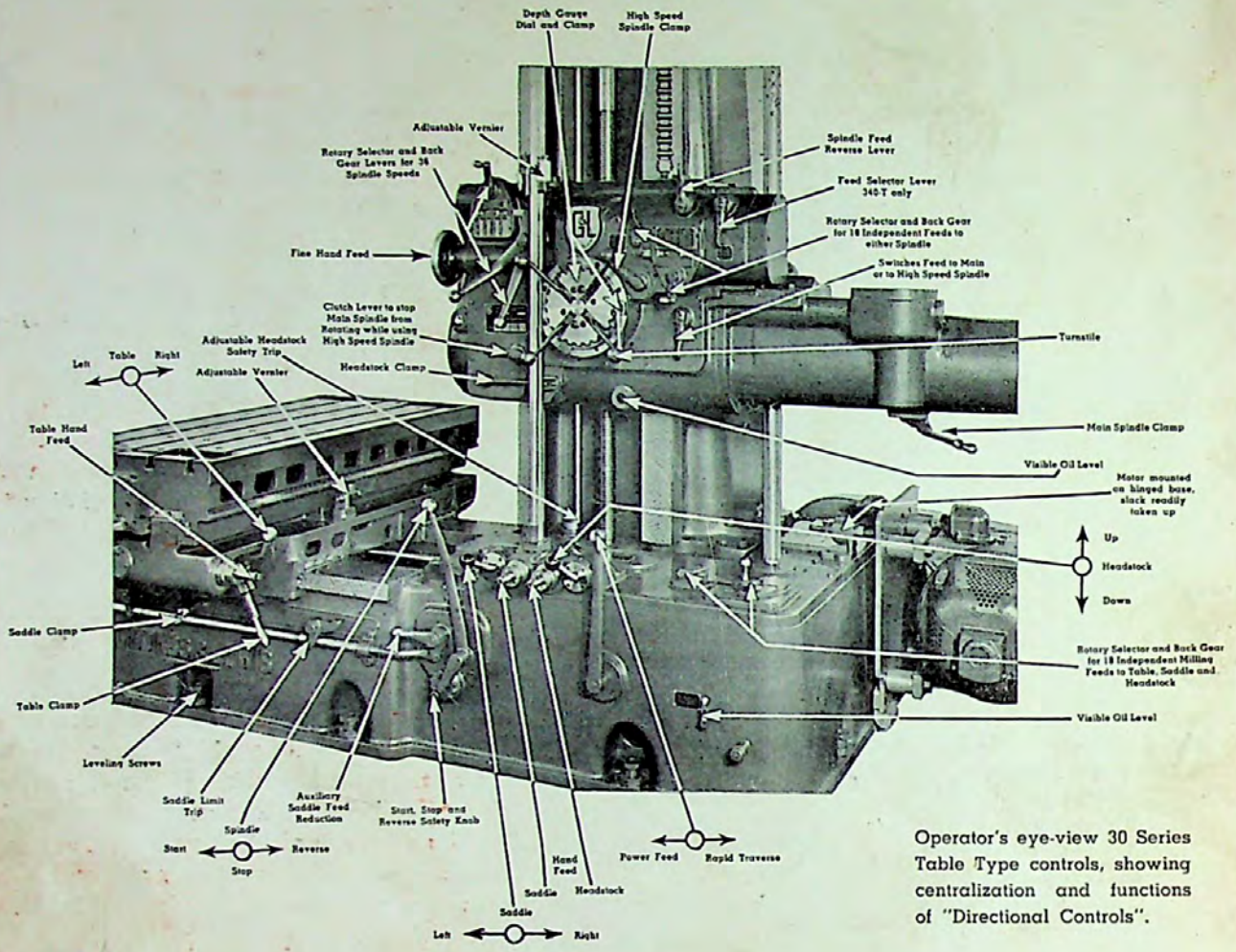
In this is incorporated the spindle reversing mechanism, consisting of two multiple disc clutches and a spur gear reversing train. A cover plate over the clutch assembly provides an adequate opening for adjusting the clutches without disturbing the remainder of the assembly. Splash lubrication is provided.

MILLING FEED UNIT

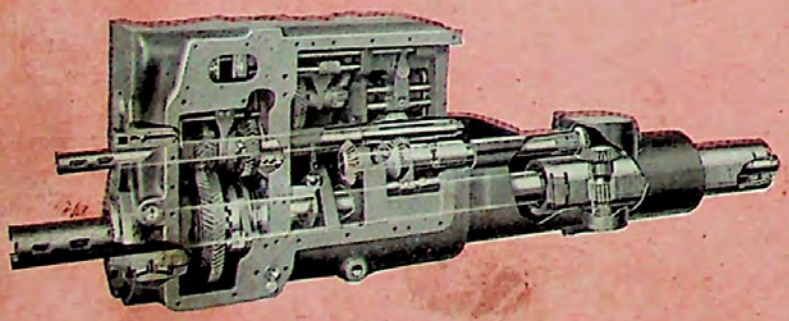
This assembly has incorporated in it the following:

1. A uni-directional mechanism that drives the feed box in one direction only, irrespective of the direction that the clutch unit is driving the machine spindle. This provides the function of directional control, so essential to easy operation and maximum production.
2. A nine speed box and a set of back gears providing eighteen milling feeds for the headstock, table and saddle.
3. Selective clutches, positive for feed, and multiple disc friction type for rapid traverse, provide a ready means of furnishing power to headstock, table or saddle, separately or in any combination. As each unit has its own reversing mechanism, any combination of forward and reverse feeds or rapid traverse may be employed.
4. A planetary feed reduction for the saddle feed making it possible to select two distinct ratios; the first from .5" to 25" per minute and the second at 1/40th of this rate or .0625" to .625" per minute. This provides a suitable boring feed for the saddle, at any spindle speed from the lowest for the main spindle to the highest for the auxiliary spindle.

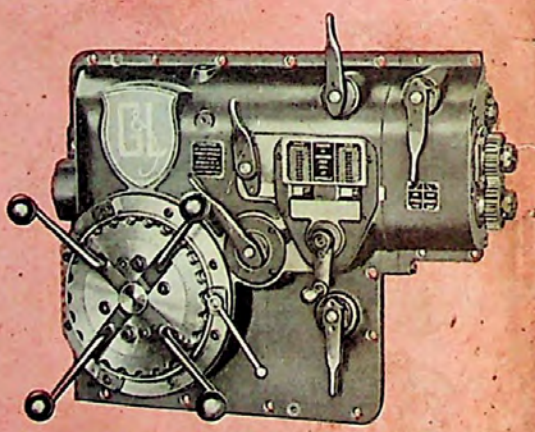
The unit construction method, as illustrated and demonstrated on the opposite page, is our standard manufacturing procedure for all Giddings and Lewis High Power, Precision Horizontal Boring, Drilling, and Milling Machines. This method not only provides us with a simplified method of manufacture, but provides the Giddings and Lewis Horizontal Boring, Drilling and Milling Machine user with a ready means of simplified maintenance because all units are integral within themselves and may be readily removed for periodical inspection or repairs when necessary.



Operator's eye-view 30 Series Table Type controls, showing centralization and functions of "Directional Controls".



Cut-away view of 30 Series Table Type Headstock



Front view Spindle Feed Unit

HEAD TYPES . . . Standard & Oversize

GENERAL FEATURES

All Giddings & Lewis Horizontal Boring, Drilling and Milling Machines, as illustrated and described in this catalog, have had incorporated in their design and manufacture those refinements that insure precision performance over a long life. In addition, we have incorporated in the machines certain operational functions which contribute directly to their ability to produce work and reduce operator fatigue.

DIRECTIONAL CONTROL

Directional control is the tying up of the various levers operating the table, saddle and headstock units in such a manner that the units always move in the direction the control levers are actuated. This fact is true regardless of whether feed or rapid traverse is engaged, or the spindle is running clockwise or counter-clockwise.

Furthermore, the machine controls are so centralized as to make it possible for the operator to remain in constant position and close to the work at all times. There is no necessity for climbing around the machine to get at the controls. (See picture on opposite page).

MICROMETER HAND ADJUSTMENT

Adjustable dials graduated to .001" allow accurate setting of all units by hand. This includes spindle feed.

ROTARY DIALS AND SELECTORS

All feeds and speeds are quickly and precisely available by slowly turning the selector crank handles. The direct reading dials are constantly visible to the operator.

SAFETY DEVICES

Movements of all units are protected by adjustable stops and limit trips. On larger type machines, this is accomplished through electrical limit switches.

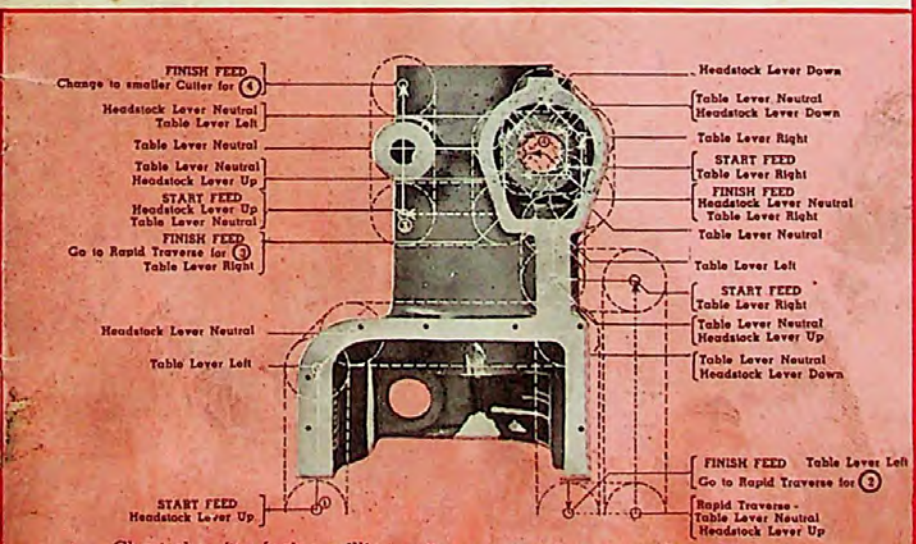
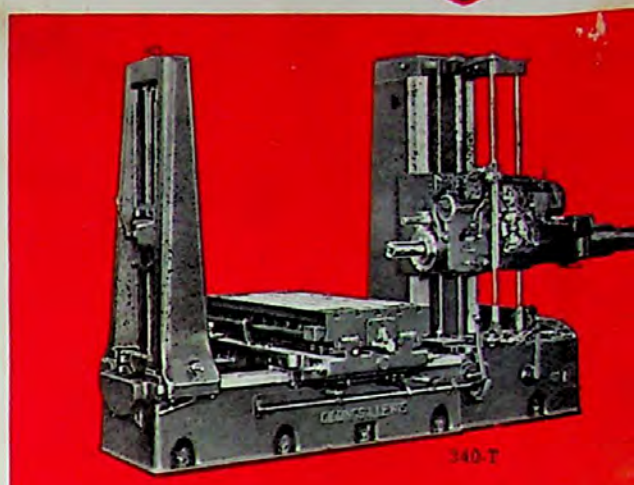
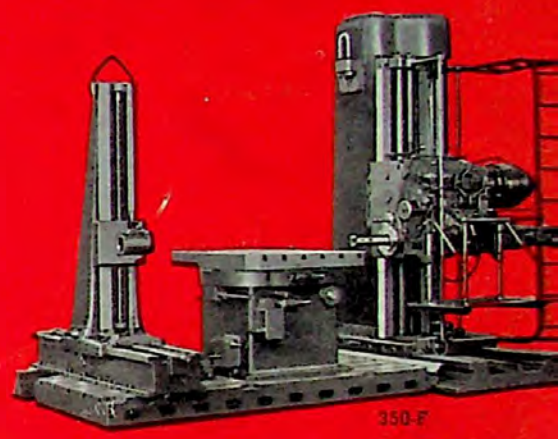


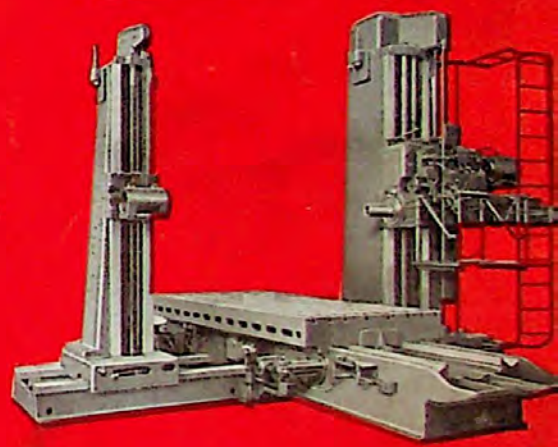
Chart showing facing milling cutter movements over an irregular contour. Movements selected by "Directional Control".



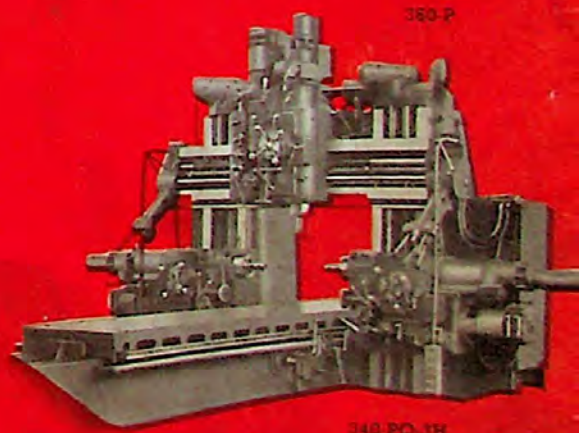
340-T



350-F

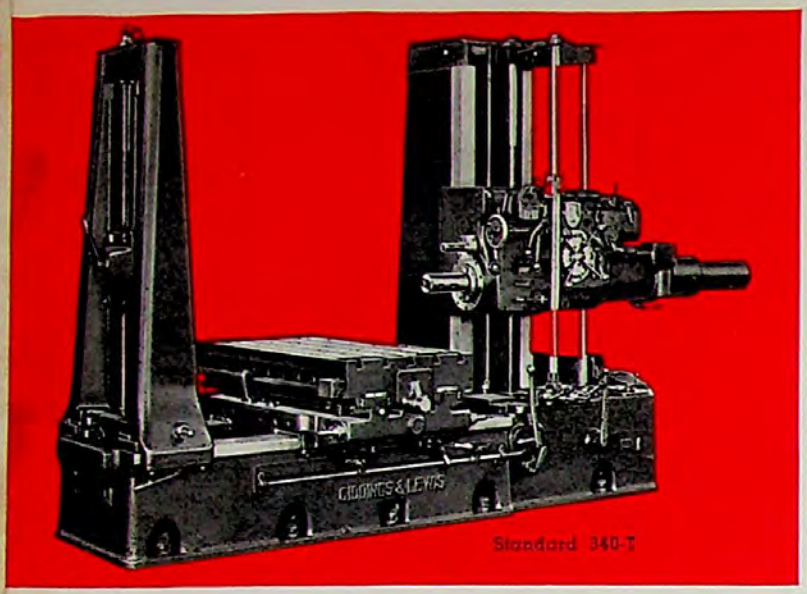


350-P



340-PQ-3H

TABLE TYPE . . . Standard



In designing this particular series of machines which are built in Table, Floor, Planer and Multiple Head Types, we have endeavored to cover the general run of work that is found in most machine shops and, at the same time, to offer a machine which is equally efficient for boring, milling, drilling or tapping. Such a machine must have a great variety of feeds and speeds, all easily and rapidly obtainable, a simple, fool-proof control so directional that even the untrained operator may work with confidence, and a high degree of accuracy so that the highly trained operator may produce the highest grade of work.

Coupled with the above features, we offer a rigid machine with the main members adequately ribbed and braced, and the machine proper fully capable of absorbing the maximum recommended horsepower. We employ the finest materials obtainable for the purpose and have incorporated in the design such features as short spline shafts for gears and clutches, all bearings of anti-friction type and power or splash lubrication to every moving member. Shaved or lapped gears guarantee quiet, smooth and long-lived operation.

Centralization of control guarantees ease of operation, and the two-spindle feature assures the operator of a suitable speed for every tool within the entire range of the machine. Scales and verniers for table and saddle movements are a standard accessory. These are easily read to .001". When the work requires the use of measuring rods, the machine may be equipped with an improved measuring device—an extra accessory.

SPECIFICATIONS — Standard

	330-T		340-T		350-T	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	3"	2"	4"	2"	5'	2"
Longitudinal travel	24"	9"	30	9"	36"	9"
Range of speeds (RPM) (36)	8.3 to 500	25 to 1500	7.5to 450	25 to 1500	6.25 to 375	25 to 1500
Range of feeds (per rev. of spindle)(18)	.007" to .375"	.002" to .125"	.010" to .500"	.002" to .125"	.010" to .500"	.002" to .125"
Optional range of feeds (18)	.005" to .250"	.001" to .084"	.005" to .250"	.001" to .062"	.005" to .250"	.001" to .062"
Maximum distance table top to spindle centers	24"	31"	36"	43½"	48"	56¾"
FEEDS DATA						
Range of milling feeds to all units (18)	.5" to 25" per min.		.5" to 25" per min.		.5" to 25" per min.	
Rapid traverse to all units	120" per min.		120" per min.		120" per min.	
MACHINE DATA						
Working surface of table	30 x 60"		36" x 72"		48" x 72"	
Cross travel of table	48"		60"		60"	
Max. dist. spindle sleeve to end sup.	60"		72"		96"	
1200 RPM constant speed motor	15 H.P.		15 H.P.		15 H.P.	
Approx. dom. ship. wt. of std. mach.	22,000 lbs.		28,000 lbs.		34,000 lbs.	

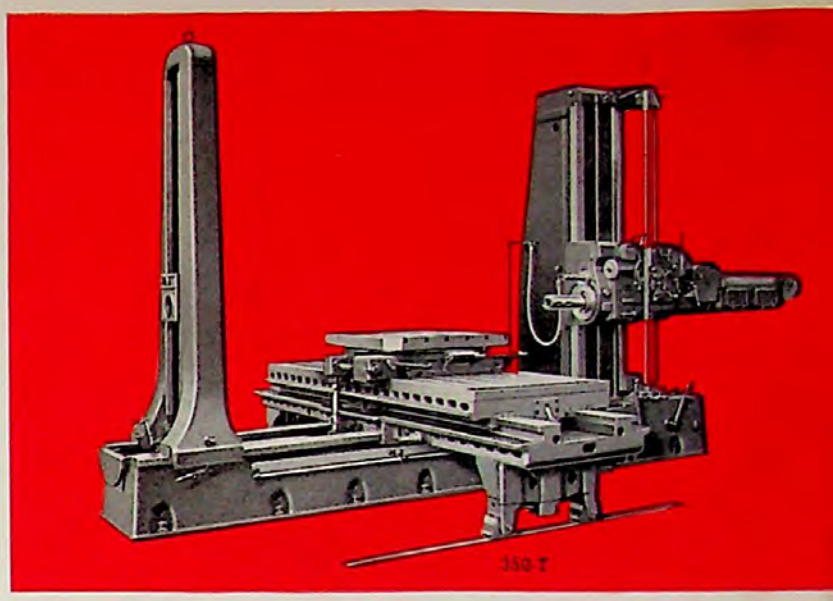
TABLE TYPE . . . Oversize

The working ranges of the Giddings and Lewis standard 30 Series Table Type machines have been established to meet average requirements. From time to time, however, manufacturers have need for extra capacity over and beyond the usual run of work. This does not necessarily mean a larger spindle diameter or greater horsepower, but rather longer beds, higher columns, and longer tables. Each of the Giddings and Lewis 30 Series Table Type Machines has been designed so that larger units may be used in almost any combination. Resulting is an increase in production capacity with no sacrifice in machine accuracy or adaptability.

In selecting the size of machine suitable for the work to be done, it should be borne in mind that bed lengths, table sizes, column heights and headstocks were developed separately for each and every one of the bar sizes and these units are not interchangeable. Consult the various specifications for each type of machine before settling on a machine range.

Oversize machines retain all the features of the standard 30 Series Table Type line including the two spindle arrangement, automatic depth gauge, rotary speed and feed selectors and direct reading dials and micrometer hand adjustment to all units. In addition, the use of the extended saddle, saddle supports and auxiliary runways (an exclusive G&L feature) permits the use of tables with exceptionally large working surfaces without the danger of inaccuracy due to overhang.

It is also possible to adapt any of our standard attachments and accessories to the machine. Above is illustrated a completely oversize 30 Series 350-T Table Type High Power, Precision Horizontal Boring, Drilling and Milling Machine. This machine has the maximum column height, bed length, table and saddle size possible to obtain on the 350-T machines. It can be noted from the picture that it is equipped with a combination plain, hand and power feed revolving table and a cutting lubricant system.



The accessory equipment as illustrated on the above machine may be applied to any of the standard or oversize machines in the 30 Series Table Type group. Furthermore, such equipment as a Built-in Thread Lead Device, Side and End Milling Attachment, Angular Milling Attachment, Vertical Milling Attachment, Star Feed Facing Head, Continuous Feed Facing and Boring Head, Precision Measuring Devices, Plain or Sliding Platen Auxiliary Tables and special accessory equipment of other kinds may be applied.

With the use of many of these accessories, the working range and production possibilities of the machines to which these attachments are applied is increased many-fold. In many cases a customer purchases a machine to do certain specific operations and jobs in his plant and fails to visualize the much wider application possible on the machine that is equipped with one or more of the above attachments.

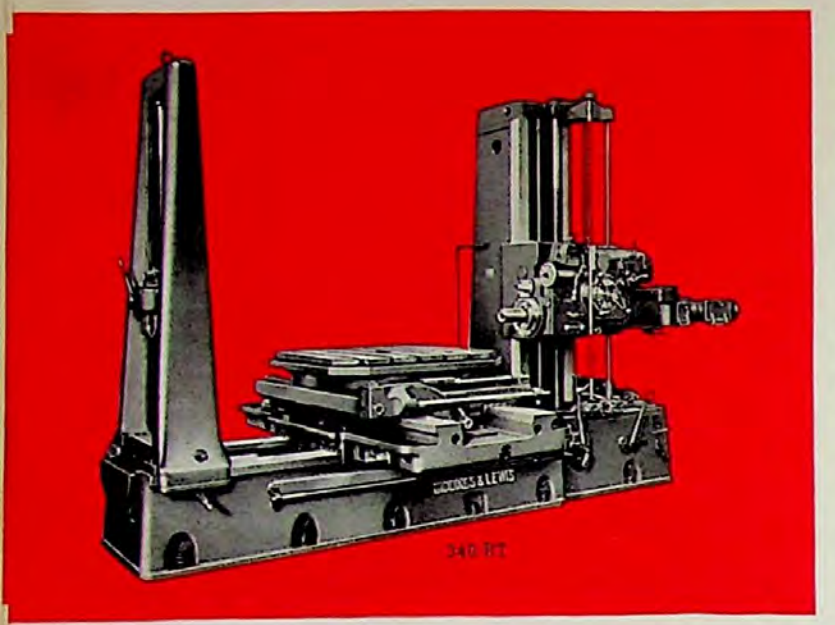
For further information ask your nearest dealer for a complete bulletin on this machine.

SPECIFICATIONS — Oversize

UNIT	330-T	340-T	350-T
BEDS	72" - 96"	96" - 120"	120" - 144"
COLUMNS	36" - 48"	48" - 60"	60" - 72"
TABLES	36" x 72" - 60" cross travel 36" x 96" - 84" cross travel *	48" x 72" - 60" cross travel 36" x 96" - 84" cross travel *	48" x 84" - 72" cross travel 48" x 96" - 84" cross travel * 60" x 96" - 84" cross travel *

* Tables equipped with extended saddle, saddle supports and auxiliary runways.

BUILT-IN REVOLVING TABLE TYPE . . . Standard & Oversize



Economical machine shop practice calls for work being done in the shortest possible time and in the most convenient manner. Whenever a job requires more than one of its surfaces, or several angular surfaces, being presented to the boring spindle or milling cutter, it is most practical to use a rotary table. Such a table may be placed on top of the conventional type of plain table or may be built into the machine. For such classes of work where this type of table is called for, we have developed the 30 Series Built-in Revolving Table Type Machines.

These Revolving Table Type Machines are a standard line of equipment and may be obtained with 3″, 4″ or 5″ diameter main spindles, and with all the features of operation, material and construction found in the regular 30 Series Table Type line. The additional feature, the Revolving Table, provides not only a movement of the table back and forth on the bed and cross-wise on the saddle, but also provides 18 separate power feeds and a rapid traverse to a rotary motion of the table.

Because of this feature, it is possible to perform all the necessary operations on all sides of the job that must be presented to the boring spindle or milling cutter on a single setup. This not only eliminates the necessity for two or more setups, but because of the accurate setting provided by the calibrations and dial indicator on the table, it insures accurate work on all parts of the job in relation to one another. In addition, the user may gain a further advantage with the rotary table by eliminating all but the initial setup and unloading time wherever a series of identical parts are to be machined. This is done by loading a second piece upon the table while the first piece is being operated upon. In this manner, all time between operations is cut down to the time required for indexing.

The rotary table is provided with conventional T-slots, coolant trough and 4 adjustable cam-type index stops. The table is graduated in ½° and may be indexed by rapid traverse, hand or power feed. A turret-type or V-ring clamp holds the table firmly in the position selected. Because of the 18 separate power feeds, it is readily possible and practical to mill outside diameters wherever necessary. The final drive to the table is transmitted by means of a cone-type or hour-glass worm driving on a worm gear securely fastened to the table proper.

It is to be noted that the use of the built-in revolving table provides additional vertical range of the main spindle of the machine above the table as compared to an auxiliary rotary table mounted to the conventional plain table machine.

SPECIFICATIONS — Built-in Revolving Table Type

	330-RT		340-RT		350-RT	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Maximum distance table top to spindle centers	30″	37″	30	37.5″	42″	50.75″
MACHINE DATA						
Working surface of table	36″ x 36″		48″ x 48″		60″ x 60″	
Cross travel of table	48″		60″		* 72″	
Interval of index stops (4 adjustable)	90°		90°		90°	
Range of milling feeds to rotary motion of table (18)	.825″ to 41.25″ per min. (at 36″ dia.)		1.1″ to 55″ per min. (at 48″ dia.)		1.375″ to 68.75″ per min. (at 60″ dia.)	
Rapid traverse to rotary motion of table	199″ per min. (at 36″ dia.)		265″ per min. (at 48″ dia.)		331″ per min. (at 60″ dia.)	
Approximate domestic shipping weight of standard machine	25,000 lbs.		31,000 lbs.		40,000 lbs.	

All other specifications not given here conform strictly to the Standard Table Type Specifications on pages 8 and 9.

* Extended saddle, saddle supports and auxiliary runways.

Oversize bed lengths, column heights same as 30 Series Table Types.

FLOOR TYPE . . . Standard & Oversize

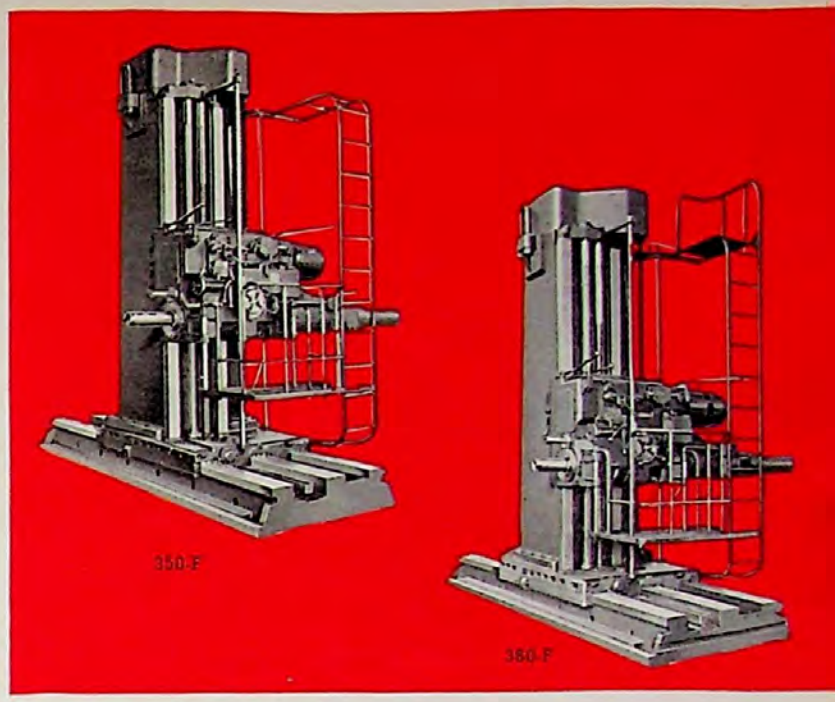
The Floor Type Machine may be used either on top or alongside a floor plate, and also in conjunction with either power or hand revolving and tilting tables. An end support mounted on its own runway provides outboard support and bearing for boring bars when required.

When employing this type of machine, either the work must be set to the machine or the machine to the work. A power revolving table mounted on a separate runway, when employed with a Floor Type Machine, provides approximately the same amount of flexibility as a Revolving Table Type Machine.

It is possible to make the Floor Type Machine of greater range than the Table Type Machine. Runways can be made in almost any length and floor plates built up of standard sections so that several Floor Type Machines may be used around a large job, mounted on a common floor plate.

You will find in the G&L 30 Series Floor Type Machines all of the control and operating features embodied in the Table Type Machines.

For further information, ask your nearest dealer for the complete bulletin describing this machine and accessories.



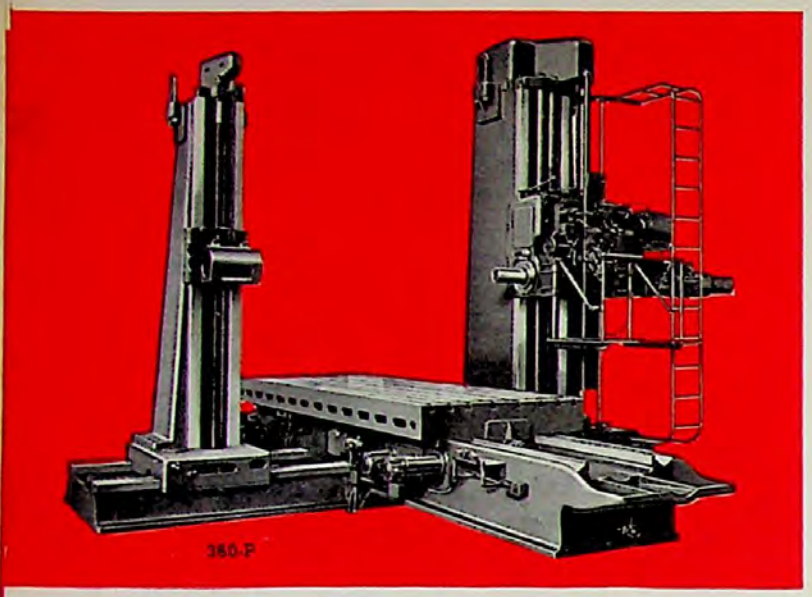
SPECIFICATIONS — Floor Type — Standard

STANDARD FLOOR TYPE	340-F		350-F		360-F	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	4″	2″	5″	2″	6″	2″
Longitudinal travel	30″	9″	36″	9″	48″	9″
Range of speeds (in rev. per min.) (36)	7.5 to 450	25 to 1500	3.13 to 187.5 6.25 to 375	12.5 to 750 25 to 1500	3.13 to 187.5 6.25 to 375	12.5 to 750 25 to 1500
Range of feeds (per rev. of spindle)(18)	.010″ to .500″	.002″ to .125″	.010″ to .500″	.002″ to .125″	.010″ to .500″	.002″ to .125″
Optional range of feeds (18)	.005″ to .250″	.001″ to .062″	.005″ to .250″	.001″ to .062″	.005″ to .250″	.001″ to .062″
Maximum distance top of runway to spindle centers	74″	81½″	87″	95¾″	87″	95¾″
FEEDS DATA						
Range of feeds to headstock and column movements (18)	.5″ to 25″ per min.		Low .25″ to 12.5″ per min. High .5″ to 25″ per min.		Low .25″ to 12.5″ per min. High .5″ to 25″ per min.	
Rapid traverse headstock and col.	120″ per min.		60″ and 120″ per min.		60″ and 120″ per min.	
MACHINE DATA						
Vertical travel headstock on column	60″		72″		72″	
Horizontal travel column on runway	60″		72″		72″	
Height of runway	14″		14″		14″	
900/1800 RPM two-speed motor	15 H.P. 1800 RPM constant speed		7½/15 H.P.		7½/15 H.P.	
Approximate domestic shipping weight standard machine	32,000 lbs.		40,000 lbs.		45,000 lbs.	

SPECIFICATIONS — Oversize

UNIT	340-F	350-F	360-F
COLUMNS	72″ - 84″ - 96″	84″ - 96″ - 120″	84″ - 96″ - 120″
RUNWAYS	84″ - 108″ - 132″ - 156″ - 180″ - 204″	96″ - 120″ - 144″ 168″ - 192″	96″ - 120″ - 144″ - 168″ - 192″
Oversize Floor Plates made up in sections 5′ wide in lengths of 120″ - 144″ - 168″ - 192″ - 216″.			

PLANER TYPE . . . Standard & Oversize



The Planer Type Horizontal Boring, Drilling and Milling Machine is of advantage whenever exceptionally heavy and long work is to be handled. On all Planer Type Machines the double length bed provides 100% support for the table and work throughout the entire cross travel. In all G&L Palner Type designs, the columns for the headstock and end support bearing block may be adjusted to and from the table as the work requires. In this way it is possible to keep large jobs properly balanced in respect to the table center.

A separate motor driven feed and rapid traverse arrangement is provided for the table so that independent feeds may be used for the table, headstock and column.

The headstock drive for all 30 Series Planer Type Machines is by means of a flange mounted 15-HP constant speed motor. The motor for the table drive varies in size with the size of the table and the work to be done.

For further information, ask your nearest dealer for the complete bulletin describing this machine.

SPECIFICATIONS — Planer Type — Standard

STANDARD PLANER TYPE	340-P		350-P		360-P	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	4"	2"	5"	2"	6"	2"
Longitudinal travel	30"	9"	36"	9"	48"	9"
Range of speeds (in rev. per min.) (36)	7.5 to 450	25 to 1500	3.13 to 187.5 6.25 to 375	12.5 to 750 25 to 1500	3.13 to 187.5 6.25 to 375	12.5 to 750 25 to 1500
Range of feeds (per rev. of spindle)(18)	.010" to .500"	.002" to .125"	.010" to .500"	.002" to .125"	.010" to .500"	.002" to .125"
Optional range of feeds (18)	.005" to .250"	.001" to .062"	.005" to .250"	.001" to .062"	.005" to .250"	.001" to .062"
Max. dist. table top to spindle centers	60"	67½"	72"	80¾"	72"	80¾"
FEEDS DATA						
Range of milling feeds to headstock and column units (18)	.5" to 25" per min.		Low .25" to 12.5" per min. High .5" to 25" per min.		Low .25" to 12.5" per min. High .5" to 25" per min.	
Rapid trav. to hdstk. and col. units	120" per min.		60" and 120" per min.		60" and 120" per min.	
Range of mill. feeds to table unit (18)	.5" to 25" per min.		.5" to 25" per min.		.5" to 25" per min.	
Rapid traverse to table unit	120" per min.		120" per min.		120" per min.	
MACHINE DATA						
Working surface of table	60" x 156"		60" x 156"		60" x 156"	
Cross travel of table	120"		120"		120"	
Bed dimensions	276" - 30" Vee Centers		276" - 30" Vee Centers		276" - 30" Vee Centers	
Hdstk. motor 900/1800 RPM two spd.	15 H.P. 1800 RPM const. speed		7½/15 H.P.		7½/15 H.P.	
Table drive motor 1200 RPM	Suitable H.P.		Suitable H.P.		Suitable H.P.	
Max. dist. spindle sleeve to end sup.	114"		138"		138"	
Horiz. travel of column on runway	24"		36"		36"	
Horiz. travel of end sup. on runway	24"		36"		36"	
Approx. dom. ship. wgt. stand. mach.	69,000 lbs.		74,000 lbs.		76,000 lbs.	

SPECIFICATIONS — Oversize

UNIT	340-P	350-P	360-P
COLUMNS	72" - 84" - 96"	84" 96" - 120"	84" - 96" - 120"
COLUMN RUNWAYS	36" - 48"	48" - 60" - 72"	48" - 60" - 72"

Information on additional working ranges of tables and beds on application.

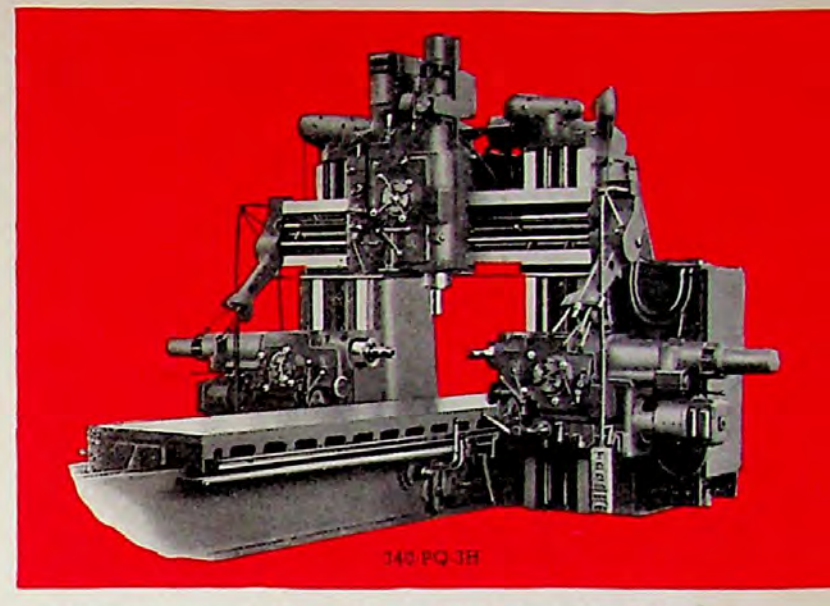
MULTIPLE HEAD TYPE . . . Standard

Because the G&L Multiple Head Machine presents, in addition to the milling operations, the possibility of performing horizontal and vertical boring, drilling and tapping, it offers adaptability to a wide variety of work; hence, it is possible for those shops who have been forced to forego the benefit of a Multiple Head Milling Machine to justify the investment because of the additional work the G&L machine can do. The difficulty of keeping the machine operating on a full-time basis is eliminated because of the endless variety of other jobs that may be handled.

The Multiple Head Machine consists of a planer type bed and table operating between two upright housings, each carrying a horizontal headstock and a common cross rail. The cross rail carries one or two vertical headstocks. All the features of the 30 Series design such as directional control, direct reading dials, independent operation of units, power lubrication, etc., have been incorporated in these machines.

Because of the special application of these machines, they are provided with an adjustable quill which supplants the high speed spindle. This quill is especially designed for heavy duty milling. The main spindle operates within the quill and is free to pass through. Thus, large diameter cutters may be mounted on the quill and may be retained there while the spindle is being used for other operations.

It is also possible to obtain these machines with swiveling headstocks, that is, headstocks that pivot in such a manner as to present the quills or boring spindles in an angular position to the work on the table. The swiveling adjustment provides 30° of pivot above and below the horizontal center of the horizontal headstocks and 30° of pivot to the left and right of the vertical center of the vertical headstocks.



Because of the unusual problems involved in the application of these machines, it is suggested that the customer present to us his complete problem so that proper recommendations can be made for table size and travel, headstock travel and cross rail elevation.

For further information, ask your nearest dealer for the complete bulletin describing this machine.

SPECIFICATIONS — Multiple Head Type — Standard

SPINDLE DATA	340-PQ-3H	350-PQ-3H
Diameter	3½"	4½"
Longitudinal travel (horizontal headstocks) (vertical headstocks)	24" 18"	30" 30"
Diameter face of spindle sleeve	6"	8"
Range of speeds (RPM) (36)	7.5 to 450	6.25 to 375
Range of feeds (per rev.) (18)	.010" to .500"	010" to .500"
Maximum distance between spindle sleeves (horizontal headstocks)	58"	70"
Maximum distance between table top and spindle centers (horizontal headstocks)	40"	50"
Maximum distance between table top and spindle sleeve (vertical headstocks)	48"	60"
QUILL DATA		
Diameter	9½"	11½"
Maximum adjustment	8"	9"
Range of feeds (per rev.) (18)	.010" to .500"	.010" to .500"

CROSS RAIL DATA	340-PQ-3H	350-PQ-3H
Maximum cross travel of vertical headstock on cross rail	56"	66"
Max. vertical travel of cross rail	40"	48"
Power raising and lowering	40"/min	40"/min
1800 constant speed reversing motor for elevating	3 H.P.	5 H.P.
MACHINE DATA		
Working surface of table	48" x 156"	60" x 156"
Cross travel of table	120"	120"
Bed dimensions	276" x 30" Vee Centers	276" x 30" Vee Centers
Range of feeds to table and headstocks (18)	.5" to 25" per min.	.5" to 25" per min.
Rapid Trav. to table and hdstks.	120" per min.	120" per min.
Hdstk. motor 1800 RPM, reversing	10 H.P.	15 H.P.
Table motor 1200 RPM	Suitable H.P.	Suitable H.P.
Approx. dom. ship. wt. std. mach.	116,000 lbs.	134,000 lbs.

We are prepared to furnish machines with larger working ranges to meet specific requirements.

GENERAL DESCRIPTION . . .

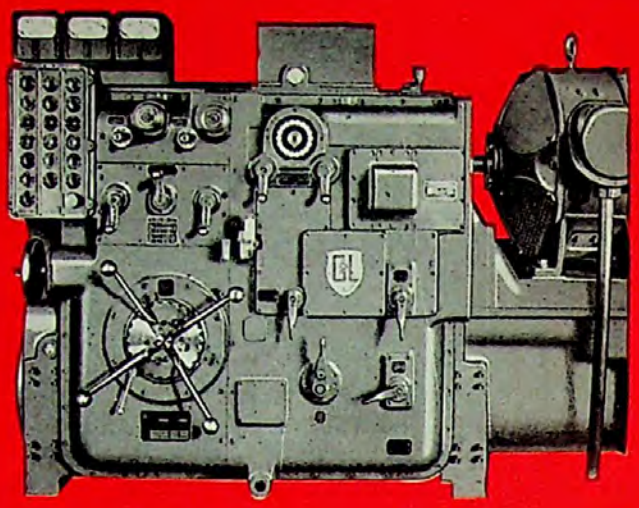
The Giddings & Lewis 50 Series Line of Table Type, Floor Type, and Planer Type Horizontal Boring, Drilling and Milling Machines exemplifies the highest development in modern machine tools. All of the outstanding features that have made G&L machines leaders in their field have been retained and many new refinements of control, more usable speed and feed ranges, remote control of all functions and positive pressure oiling to all sliding surfaces and bearings have been added. Particular attention has been given to the speed and feed ranges to especially adapt them to the use of high speed steel, the newer cutting alloys or carbides. The working range of these machines has been purposely designed to accommodate all classes of work and in particular, large types of work. Similarly, machine controls have been simplified and centralized to the point that only a few movements of the machine remain that must be manually controlled; all others are controlled by means of an electro-hydraulic system through electrical push button panels. Two of these panels are furnished with each machine, one of them a fixed panel on the headstock of the machine, the other, an exact duplicate, is furnished at the end of a long flexible cable permitting the operator to leave his normal position on the operating platform and to operate the machine in close proximity to the job and yet retain full control over the machine. (See illustrations at right).

The G&L design policy of unit construction has been carefully adhered to on these machines, and all materials used are of the finest available. Furthermore, such design features as short spline shafts for gears and clutches, all anti-friction type bearings, all shaved and lapped gears guarantee quiet, long-lived operation.

All 50 Series Machines are available with either AC or DC drive, and are delivered to the customer complete with all electrical equipment mounted and wired.

Movements of all the various units on the 50 Series Machines are fully protected by limit switches and safety trips. Furthermore, the full pressure lubricating and hydraulic system is so designed so as to fully protect the machine by providing pressure switches which automatically cut off all power to the machine should there be even a partial failure in any part of the system.

For further information ask your nearest dealer for the complete bulletins describing these machines.



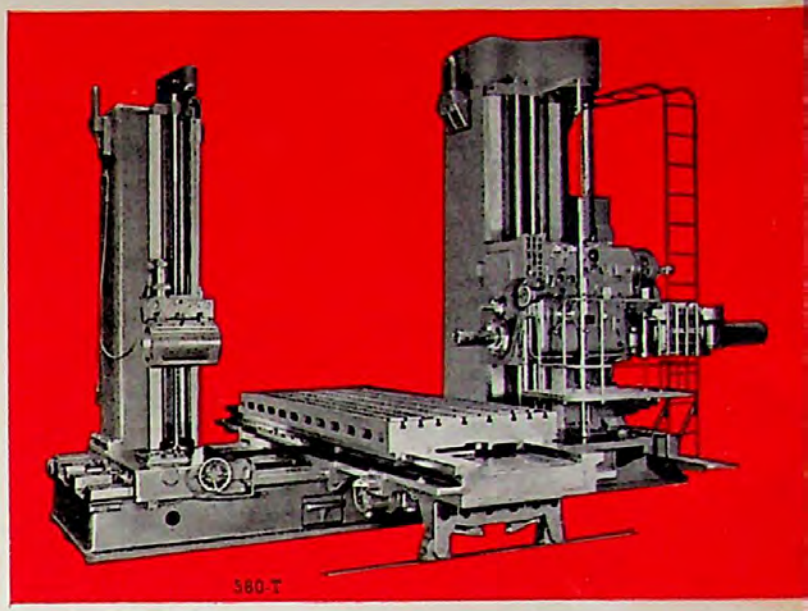
HEADSTOCK

The necessary change gearing for obtaining all spindle feeds and speeds is enclosed in this unit. The final drive to both spindles is through Herringbone type gearing. Rapid traverse to main and auxiliary spindles in both directions is provided through hydro-electric operated multiple disc clutches. The main spindle may be declutched, clamped against rotation and fed or rapid traversed "in" or "out" to perform slotting or shaping operations.

ELECTRICAL CONTROLS

Two control stations, one on the headstock, the other portable, allow full control over all functions within the complete working range of the machine. Engagement of these functions is made by selector switches or push buttons, operating hydro-electric units. All clamps, including main spindle clamps, are likewise operated by hydro-electric devices. Interlocks are provided so that power cannot be applied to any element when the clamp is engaged.

TABLE TYPE . . . Standard & Oversize



The Giddings & Lewis 50 Series Table Type, High Power, Precision Horizontal Boring, Drilling and Milling Machines have all the characteristics and features that mark them as being completely modern, heavy duty equipment. Wider ranges of speeds and feeds, remote control of all functions, power traverse to all elements, bed way guards, positive oiling to all surfaces and bearings, all contribute to more and better production with less fatigue to the operator. Boring, Drilling and Milling Operations are all performed with equal efficiency, and the wide range of speeds and feeds available permits the use of either high speed steel or any of the newest cutting alloys.

The machine has been provided with all the well-known Giddings & Lewis standard features, such as two spindle arrangement, independent operation of units, rotary selectors and direct reading dials, automatic depth gauge, in addition to the special refinements and engineering improvements that are the outstanding characteristics of the 50 Series Line.

It is to be noted that the 50 Series Machines offer to the user an extremely wide working range. Table Type Machines are available with a 6" or 7" diameter main spindle and practically any working range within practical limits.

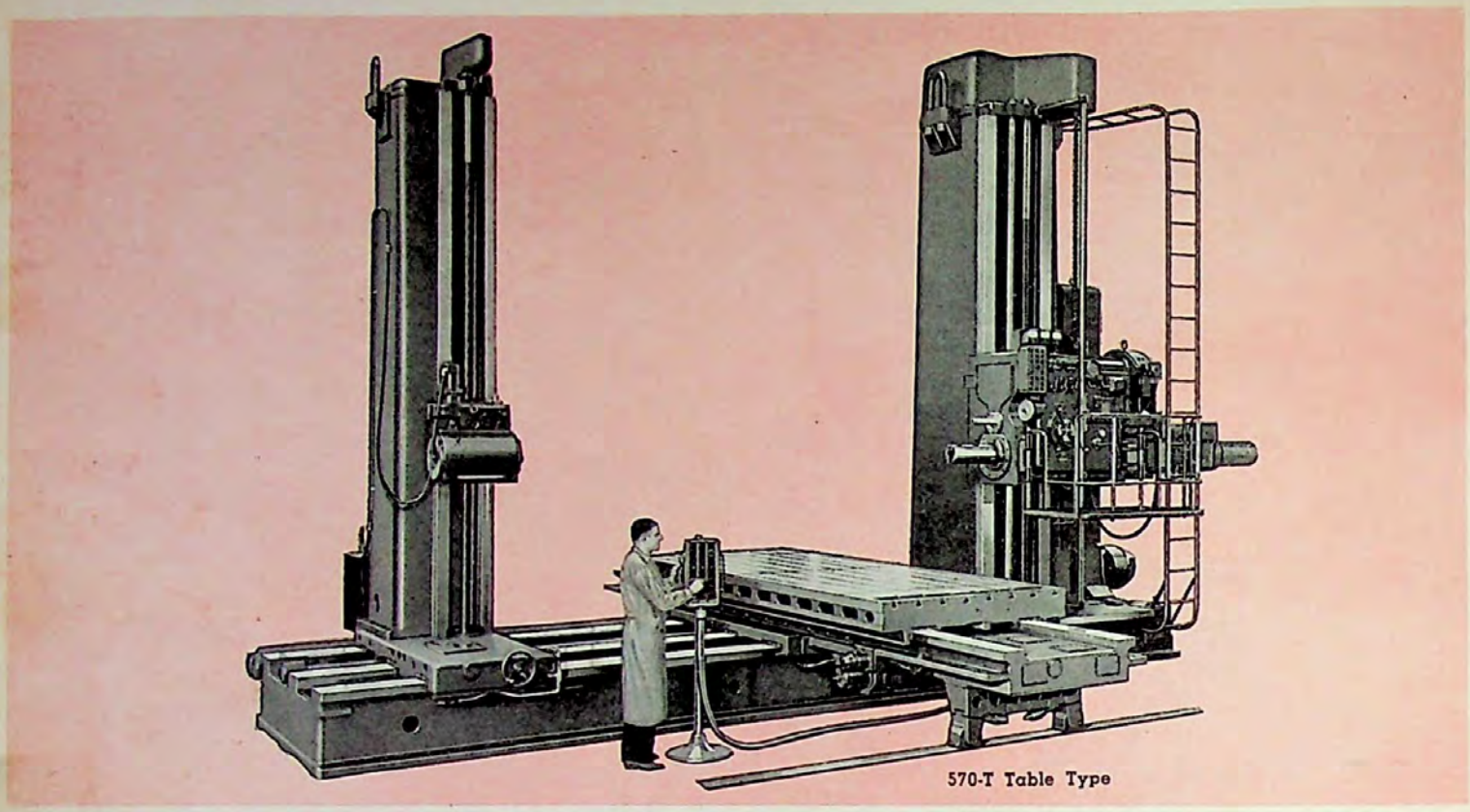
Because of the unusual selection of working ranges available, and because of the unusual flexibility incorporated in the feed and speed ranges, the machines have proven to be of exceptional value in the mass production of large steam, Diesel and gas engines, Army and Navy Ordnance material, large turbo and hydro-electric equipment, etc.

For further information ask your nearest dealer for a complete bulletin on this machine.

SPECIFICATIONS — Table Type (560-T) — Standard

560-T	Alternating Current		Direct Current	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	6"	2½"	6"	2½"
Longitudinal travel	60"	15"	60"	15"
Number of speeds	45	45	Over 100	Over 100
Range of speeds (RPM)	1.6 to 300	6.4 to 1200	1.5 to 300	6 to 1200
Number of feeds	21	18	21	18
Range of feeds (per revolution of spindle)	.005" to .250" .010" to .500"	.002" to .125"	.005" to .250" .010" to .500"	.002" to .125"
Maximum distance table top to spindle centers	76"	88"	76"	88"
SPEEDS AND FEEDS DATA				
Range of milling feeds to all units	.5" to 25" per min.		.5" to 25" per min.	
Rapid traverse to all units	120" per min.		120" per min.	
MACHINE DATA				
Working surface of table	60" x 104"		60" x 104"	
Cross travel of table	84"		84"	
Maximum distance spindle sleeve to end support	122"		122"	
Approximate domestic shipping weight of standard machine	120,000 lbs.		120,000 lbs.	

TABLE TYPE . . . Standard & Oversize



570-T Table Type

SPECIFICATIONS — Table Type (570-T) — Standard

570-T	Alternating Current		Direct Current	
SPINDLE DATA	Main Spindl	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	7″	2½″	7″	2½″
Longitudinal travel	60″	15″	60″	15″
Number of speeds	45	45	Over 100	Over 100
Range of speeds (RPM)	1.6 to 300	6.4 to 1200	1.5 to 300	6 to 1200
Number of feeds	21	18	21	18
Range of feeds (per revolution of spindle)	.005″ to .250″ .010″ to .500″	.002″ to .125″	.005″ to .250″ .010″ to .500″	.002″ to .125″
Maximum distance table top to spindle centers	100″	112″	100″	112″
SPEEDS AND FEEDS DATA				
Range of milling feeds to all units	.5″ to 25″ per min.		.5″ to 25″ per min.	
Rapid traverse to all units	120″ per min.		120″ per min.	
MACHINE DATA				
Working surface of table	60″ x 140″		60″ x 140″	
Cross travel of table	120″		120″	
Maximum distance spindle sleeve to end support	146″		146″	
Approximate domestic shipping weight of standard machine	140,000 lbs.		140,000 lbs.	

50 SERIES SPECIFICATIONS — Oversize

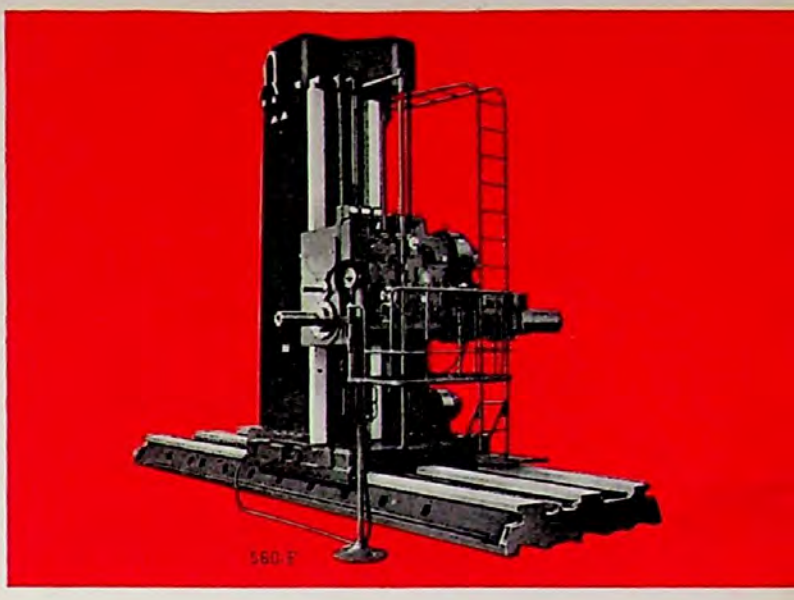
UNIT	560-T	570-T
BEDS	144″ - 168″ - 192″ - 216″	168″ - 192″ - 216″
COLUMNS	84″ - 96″ - 120″	120″
TABLES	60″ x 140″ - 120″ cross feed * 72″ x 164″ - 144″ cross feed *	72″ x 164″ - 144″ cross feed *

* Tables equipped with extended saddle, saddle supports and auxiliary runways.

FLOOR TYPE . . . Standard & Oversize

The Giddings & Lewis 50 Series Floor Type, High Power, Precision Horizontal Boring, Drilling, and Milling Machine presents to the user new and higher standards of accuracy, greater convenience of operation, more production, and a maximum of flexibility. These machines are the acme of modern development of the conventional type of floor type, or open-side Horizontals. They make available to the user new and higher standards of accuracy because they are so designed and constructed so as to make them a precision machine tool, capable of work of unusual size. More and better production is obtained from these machines because they have incorporated in them all the features of the 50 Series Machine previously described, such as remote control, wide speed and feed ranges, independent operation of units and greater convenience of operation, each one an important factor in modern production methods. Because of the ease of control and convenience of operation, operators are able to produce a better class of work and more work in less time, without overtaxing their energy.

Like all Floor Type Machines, the 50 Series machines may be used on a foundation along side of a floor plate, or may be arranged as a portable type, to be moved from place to place throughout the shop and mounted on top of a floor plate. The latter is the



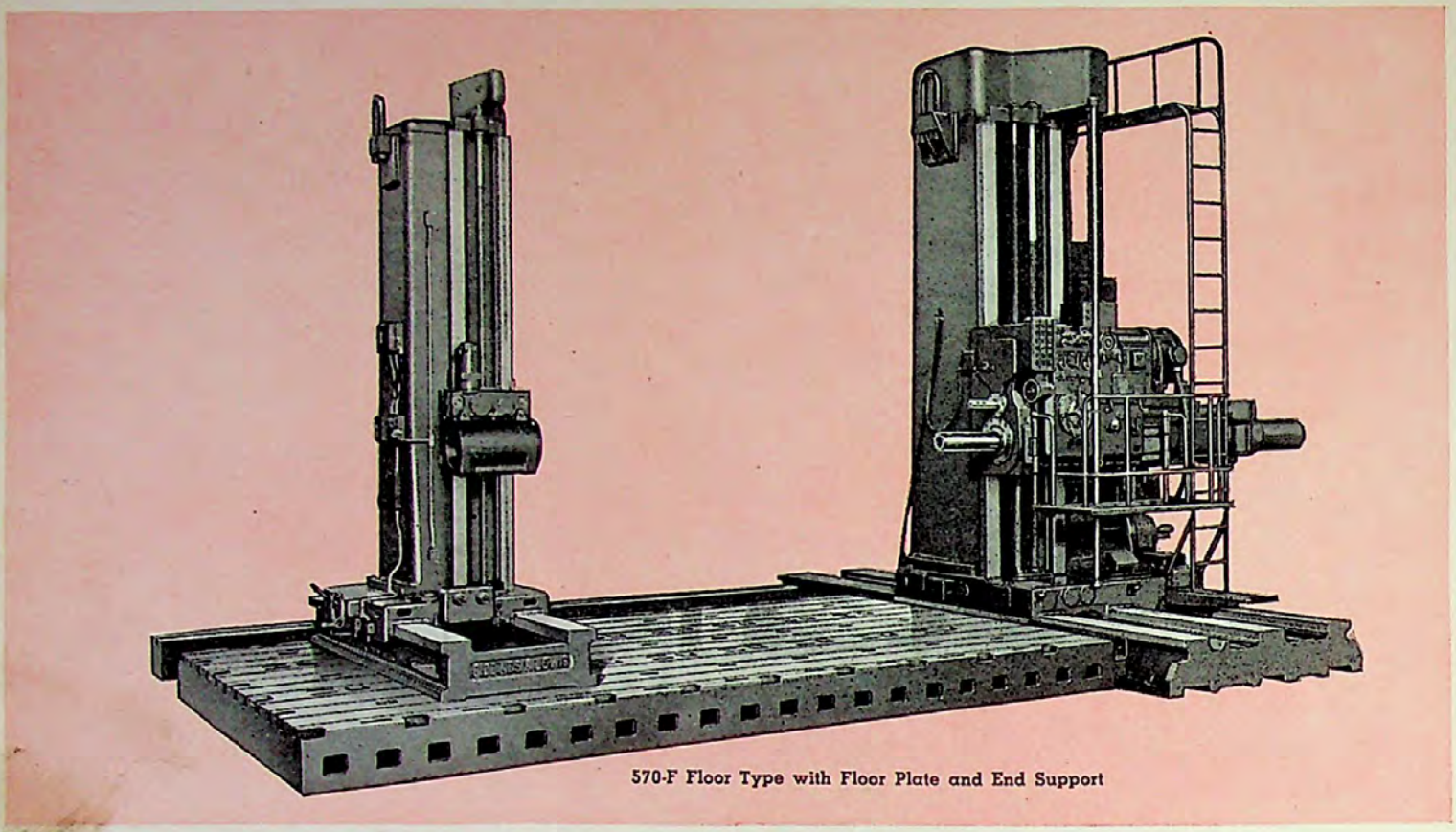
usual arrangement where work is extremely large and it is simpler to move the machine to the work than the work to the machine. Two or more of these portable units may be used on a large common floor plate to do several operations on different parts of the same job at the same time.

For further information ask your nearest dealer for a complete bulletin on this machine.

SPECIFICATIONS — Floor Type (560-F) Standard

560-F	Alternating Current		Direct Current	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	6"	2½"	6"	2½"
Longitudinal travel	60"	15"	60"	15"
Number of speeds	45	45	Over 100	Over 100
Range of speeds (RPM)	1.6 to 300	6.4 to 1200	1.5 to 300	6 to 1200
Number of feeds	21	18	21	18
Range of feeds (per revolution of spindle)	.005" to .250" .010" to .500"	.002" to .125"	.005" to .250" .010" to .500"	.002" to .125"
Maximum distance top of ways to spindle centers	96"	108"	96"	108"
SPEEDS AND FEEDS DATA				
Range of milling feeds to all units	.5" to 25" per min.		.5" to 25" per min.	
Rapid traverse to all units	120" per min.		120" per min.	
MACHINE DATA				
Horizontal travel of column on runway	72"		72"	
Vertical travel of headstock on column	72"		72"	
Height of column runway	16"		16"	
Approximate domestic shipping weight of standard machine	76,500 lbs.		76,500 lbs.	

FLOOR TYPE . . . Standard & Oversize



570-F Floor Type with Floor Plate and End Support

SPECIFICATIONS — Floor Type (570-F) Standard

570-F	Alternating Current		Direct Current	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	7"	2½"	7"	2½"
Longitudinal travel	60"	15"	60"	15"
Number of speeds	45	45	Over 100	Over 100
Range of speeds (RPM)	1.6 to 300	6.4 to 1200	1.5 to 300	6 to 1200
Number of feeds	21	18	21	18
Range of feeds (per revolution of spindle)	.005" to .250" .010" to .500"	.002" to .125"	.005" to .250" .010" to .500"	.002" to .125"
Maximum distance top of ways to spindle centers	120"	132"	120"	132"
SPEEDS AND FEEDS DATA				
Range of milling feeds to all units	.5" to 25" per min.		.5" to 25" per min.	
Rapid traverse to all units	120" per min.		120" per min.	
MACHINE DATA				
Horizontal travel of column on runway	96"		96"	
Vertical travel of headstock on column	96"		96"	
Height of column runway	16"		16"	
Approximate domestic shipping weight of standard machine	86,500 lbs.		86,500 lbs.	

50 SERIES SPECIFICATIONS — Oversize

UNIT	560-F	570-F
COLUMNS	84" - 96" - 120" - 144"	120" - 144"
RUNWAYS	96" - 120" - 144" - 168" - 192"	120" - 144" - 168" - 192"
Floor Plates made up in sections 4' wide in lengths of 144" - 168" - 192" - 216" - 240" - 264" - 288".		

PLANER TYPE . . . Standard & Oversize

The Giddings & Lewis 50 Series Planer Type, High Power, Precision Horizontal Boring, Drilling and Milling Machine offers distinct advantages wherever exeptionally heavy work requires a greater cross travel than it is possible to obtain on the conventional table type machines. The large planer type table and bed provides extremely long cross travel without overhang, and the range of the floor type machine is combined with the production possibilities of a table type machine.

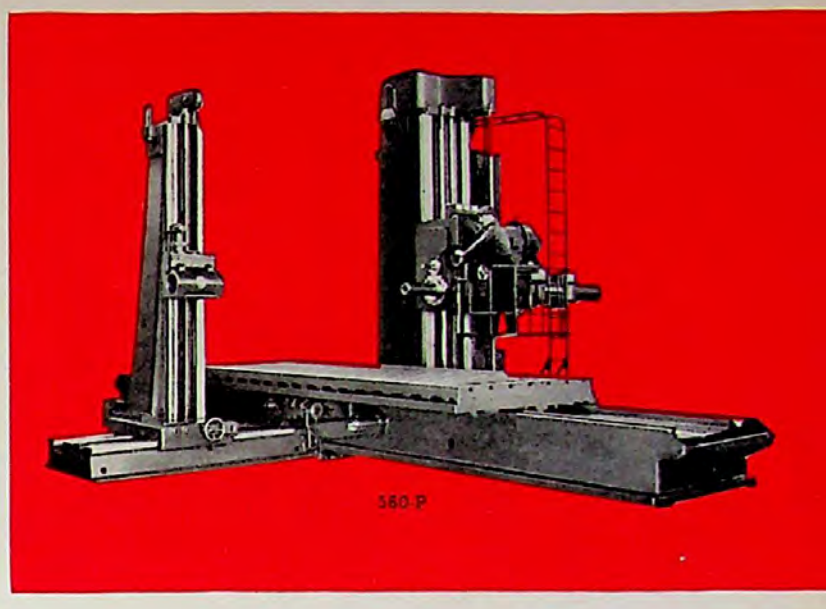
Every feature of the entire 50 Series Line has been retained in this machine. Full attention has been given to maintaining the same high standards of accuracy and workmanship.

The table drive of these machines is by means of a motor of suitable horsepower for the work planned to be done. The wide range of feeds to the table, coupled with the equally wide ranges of speeds and feeds to the column, headstock and spindle guarantee equal efficiency on small or large work.

All units of the machine are designed to operate simultaneously or independently of each other and are fully controlled from either the operator's platform or the remote control station.

A separate motor raises and lowers the headstock at varying rates of feed by driving a large diameter elevating screw, and also provides the driving power for the column feed in and out on the runway. The end support block moves up and down on its column in exact synchronism with the headstock by means of a matched elevating screw which is driven in unison with the headstock elevating screw.

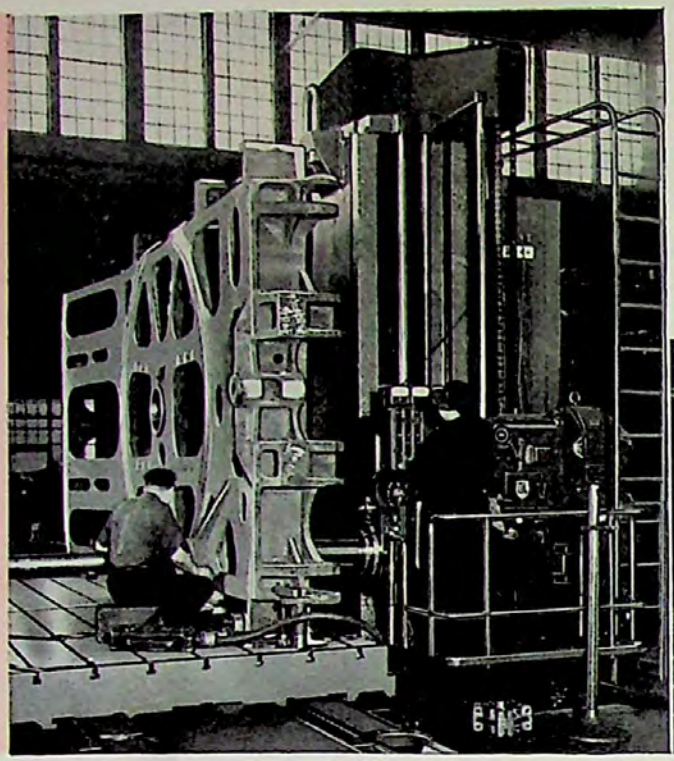
For further information ask your nearest dealer for a complete bulletin describing this machine.



SPECIFICATIONS — Planer Type (560-P) - Standard

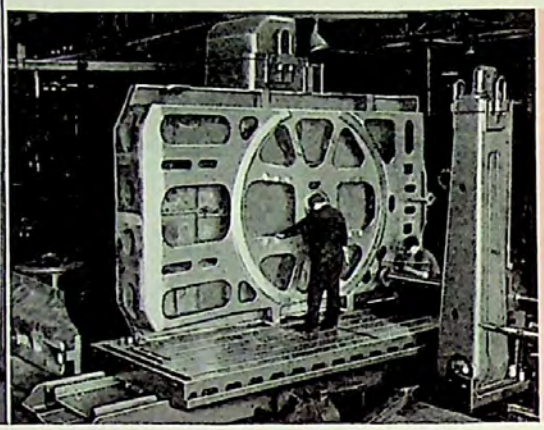
560-P	Alternating Current		Direct Current	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	6"	2½"	6"	2½"
Longitudinal travel	60"	15"	60"	15"
Number of speeds	45	45	Over 100	Over 100
Range of speeds (RPM)	1.6 to 300	6.4 to 1200	1.5 to 300	6 to 1200
Number of feeds	21	18	21	18
Range of feeds (per revolution of spindle)	.005" to .250" .010" to .500"	.002" to .125"	.005" to .250" .010" to .500"	.002" to .125"
Maximum distance table top to spindle centers	72"	84"	72"	84"
SPEEDS AND FEEDS DATA				
Range of milling feeds to all units	.5" to 25" per min.		.5" to 25" per min.	
Rapid traverse to all units	120" per min.		120" per min.	
MACHINE DATA				
Working surface of table	60" x 156"		60" x 156"	
Cross travel of table	120"		120"	
Bed dimensions	276" - 30" Vee Centers		276" - 30" Vee Centers	
Multiple motor drive	Suitable H.P.		Suitable H.P.	
Maximum distance spindle sleeve to end support	160"		160"	
Horizontal travel of column on runway	48"		48"	
Horizontal travel of end support on runway	48"		48"	
Approximate domestic shipping weight of standard machine	122,000 lbs.		122,000 lbs.	

PLANER TYPE . . . Standard & Oversize



At left can be seen a typical installation of a G&L 50 Series 570-P Planer Type machine.

Operation—Boring and Milling on an 11 ton power shovel base. Net weight of machine shown 180,000 lbs.



SPECIFICATIONS—Planer Type (570-P) Standard

570-P	Alternating Current		Direct Current	
SPINDLE DATA	Main Spindle	High Speed Spindle	Main Spindle	High Speed Spindle
Diameter	7"	2½"	7"	2½"
Longitudinal travel	60"	15"	60"	15"
Number of speeds	45	45	Over 100	Over 100
Range of speeds (RPM)	1.6 to 300	6.4 to 1200	1.5 to 300	6 to 1200
Number of feeds	21	18	21	18
Range of feeds (per revolution of spindle)	.005" to .250" .010" to .500"	.002" to .125"	.005" to .250" .010" to .500"	.002" to .125"
Maximum distance table top to spindle centers	96"	108"	96"	108"
SPEEDS AND FEEDS DATA				
Range of milling feeds to all units	.5" to 25" per min.		.5" to 25" per min.	
Rapid traverse to all units	120" per min.		120" per min.	
MACHINE DATA				
Working surface of table	72" x 156"		72" x 156"	
Cross travel of table	120"		120"	
Bed dimensions	276" - 37" Vee Centers		276" - 37" Vee Centers	
Multiple motor drive	Suitable H.P.		Suitable H.P.	
Maximum distance spindle sleeve to end support	172"		172"	
Horizontal travel of column on runway	48"		48"	
Horizontal travel of end support on runway	48"		48"	
Approximate domestic shipping weight of standard machine	137,000 lbs.		137,000 lbs.	

50 SERIES SPECIFICATIONS—Oversize

UNIT	560 P	570-P
COLUMNS	84" - 96" - 120" - 144"	120" - 144"
COLUMN RUNWAYS	60" - 72"	60" - 72"

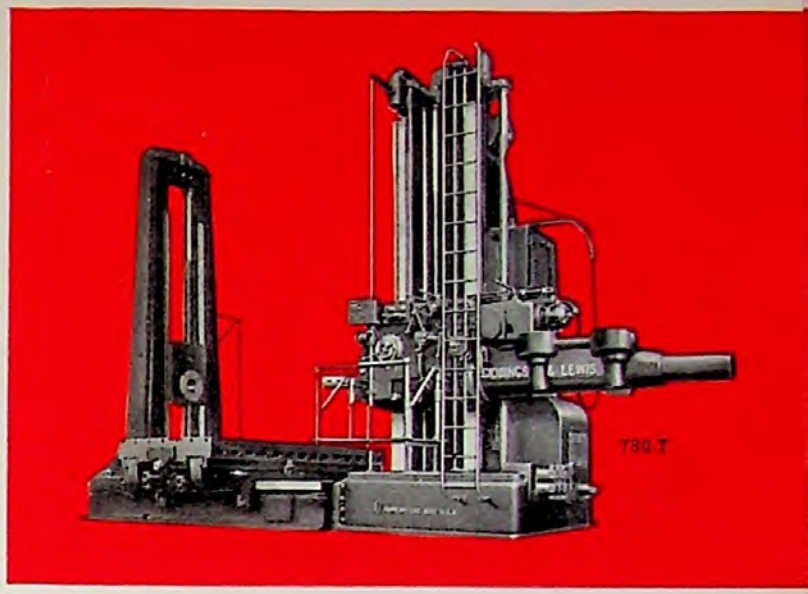
Information on additional working ranges of tables and beds on application.

TABLE TYPE . . . Standard & Oversize

A line of high power, Precision Horizontal Boring, Drilling and Milling Machines can only be considered complete when provision is made for the manufacture of exceptionally large machines, whose horsepower, main spindle diameter, and working range are specifically designed for the modern production methods used in manufacture of the heavier types of capital industrial equipment. Industries, such as ship yards, steel mills, hydro-electric power equipment manufacturers, etc., have continually been faced with the necessity for obtaining large, heavy duty machines of all types to be used in their manufacturing processes. Too often, they have been forced to purchase machines poorly adapted to their work, resulting in greatly increased costs.

The Giddings & Lewis line of 70 Series Machines has done much to solve this problem. The 70 Series Line supplies machines with an 8" diameter main spindle in table, floor, and planer types, and with working ranges that readily accommodate themselves to the larger classes of work.

A single 15/40 H.P. 450/1200 R.P.M. motor drives the entire machine. Full information should always accompany your inquiry giving the voltage, direct or alternating current, and if the latter, the number of phases and cycles. These motors cannot be made the reconnecting type and must be furnished for a single voltage. The control of the machine has been carefully designed to provide a maximum of operating convenience and flexibility. A push button panel, mounted on the headstock, controls electrically all the principal elements of the machine, such as saddle (back and forth), table (left and right), spindle (feed), and headstock (up and down). The panel also controls all clamps for each unit, all being power operated. A remote control panel duplicating the stationary one is also provided.



The standard working range of this machine is given in the table below. Giddings & Lewis are prepared to offer variations from these working ranges to meet particular customer requirements.

For further information ask your nearest dealer for a complete bulletin on this machine.

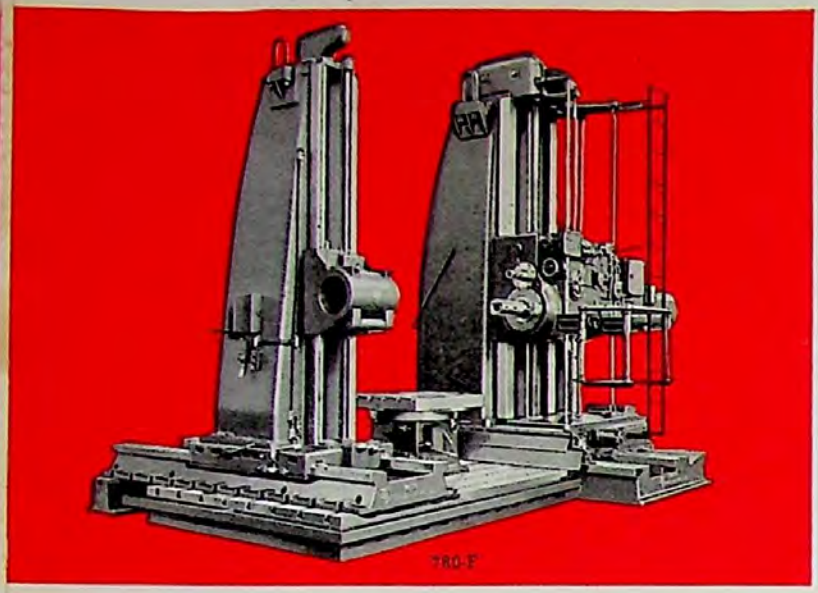
SPECIFICATIONS — Table Type — Standard

STANDARD TABLE TYPE	780-T	
SPINDLE DATA	Main Spindle	High Speed Spindle
Diameter	8"	3½"
Longitudinal travel	72"	18"
Range of speeds (RPM) (36)	1 to 60 3 to 180	4 to 240 12 to 720
Range of feeds (per rev. of spindle) (18)	.010" to .500"	.002" to .125"
Optional range of feeds (per rev. of spindle) (18)	.005" to .250"	.001" to .062"
Maximum distance table top to spindle centers	87"	72"

	780-T
SPEEDS AND FEEDS DATA	
Range of milling feeds to all units (18)	Low .2" to 10" per min. High .58" to 30" per min.
Rapid traverse to all units	40" and 120" per min.
MACHINE DATA	
Working surface of table	60" x 128"
Cross travel of table	96"
Maximum distance spindle sleeve to end support	120"
450/1200 RPM two speed motor	15/40 H.P.
Approximate domestic shipping weight of standard machine	120,000 lbs.

We are prepared to furnish machines with larger working ranges to meet specific requirements.

FLOOR TYPE . . . Standard & Oversize



The 70 Series Floor Type Machines are of exceptionally heavy and rugged construction. They will be furnished either as permanently mounted, or as portable equipment; that is, the machine may be mounted on a permanent foundation and the work placed on a floor plate next to the machine, or for extremely large work the machine may be set alongside the work. All of the exclusive features of the G&L line, such as two spindle arrangement, automatic depth gauge, electrical control and independent operation of units, and micrometer hand adjustments are provided on these machines. Safety devices are provided to all movable units so that the feed is automatically disengaged when the units reach their extreme positions. In addition, controls are interlocked so that no feed may be applied to the unit when clamped, and vice versa.

Lubrication of these machines is by power driven pumps, except where isolated bearings for vertical shafts, screws, and counter-weight sheave brackets make this impractical. These remote points are taken care of by grease lubrication.

A single 15/40 H.P. 450/1200 R.P.M. motor drives the entire machine. Full information should always accompany your inquiry giving the voltage, direct or alternating current, and if the latter, the number of phases and cycles. These motors cannot be made the reconnecting type and must be furnished for a single voltage.

Production possibilities of any floor type machine may be vastly increased with the application of auxiliary equipment. The 70 Series machine is no exception. You will note that the picture shown in the upper left-hand corner of the page shows a large 70 Series Floor Type unit complete with a floor plate, end support, and universal tilting and revolving table. This type of installation is of considerable value to a manufacturer because it presents the possibilities of doing either large or small work, stub or through boring, and various types of milling operations each to the best advantage.

For further information ask your nearest dealer for a complete bulletin on this machine.

SPECIFICATIONS — Floor Type — Standard

STANDARD FLOOR TYPE	780-F	
SPINDLE DATA	Main Spindle	High Speed Spindle
Diameter	8"	3½"
Longitudinal travel	72"	18"
Range of speeds (RPM) (36)	1 to 60 3 to 180	4 to 240 12 to 720
Range of feeds (per rev. of spindle) (18)	.010" to .500"	.002" to .125"
Optional range of feeds (per rev. of spindle) (18)	.005" to .250"	.001" to .062"
Maximum distance top of runway to spindle centers	129½"	144½"

	780-F
SPEEDS AND FEEDS DATA	
Range of milling feeds to headstock & col. movements (18)	Low .2" to 10" per min. High .58" to 30" per min
Rapid traverse to headstock and column movements	40" and 120" per min.
MACHINE DATA	
Vert. travel of headstock on col.	96"
Horizon. travel of col. on runway	96"
Height of runway	15½"
450/1200 RPM two speed motor	15/40 H.P.
Approximate domestic shipping weight of standard machine	105,000 lbs.

We are prepared to furnish machines with larger working ranges to meet specific requirements.

PLANER TYPE . . . Standard & Oversize

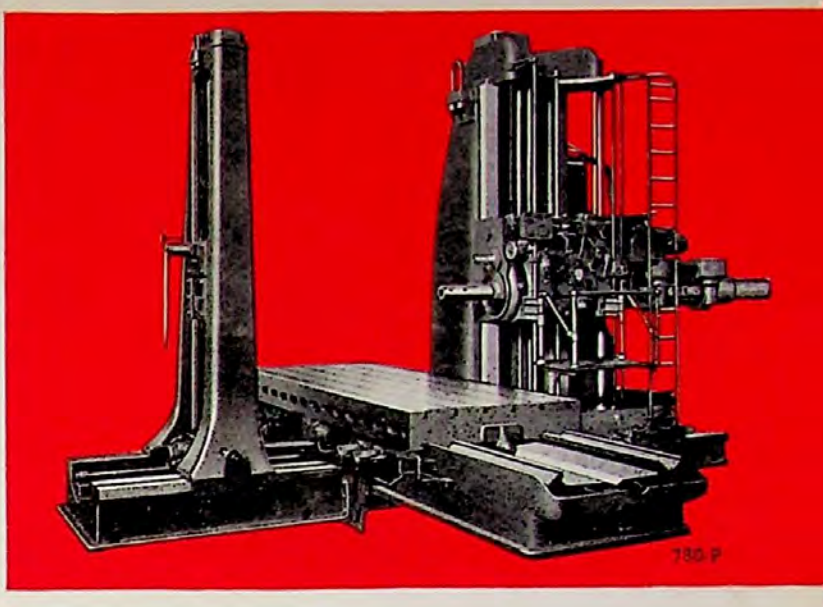
The Giddings & Lewis 70 Series Planer Type, Horizontal Boring, Drilling and Milling Machine is particularly suited for heavy work requiring a table with long cross travel. The large planer type table is provided with a double length bed eliminating overhang, and as it is provided with high pressure, flood lubrication it is particularly suited for doing exceptionally heavy and long work. The table is driven by a separate constant speed motor of suitable horsepower, depending largely upon the work planned for the machine.

The machine is completely equipped with all of the features of the Giddings & Lewis line including two spindle arrangement, directional control, independent operation of units, micrometer hand adjustment, and automatic depth gauge, etc. The electrical control of this machine, like that on the table and floor types, activates all of the principal movements of the machine and provides interlocks to prevent the application of feed to a unit when it is clamped and vice versa. In addition, it also provides safety limit switches which are located at the extremes of travel for all units. The machine is also provided with a rapid traverse feature which can be used to jump gaps between machine surfaces without complicated lever movements. The rapid traverse is either at the rate of 120" per minute or 40" per minute according to the motor speed in use, and the feed and rapid traverse movements are interlocked, so that they cannot be engaged simultaneously.

All clamps of the machine are power operated by means of high torque motors.

Separate milling feeds, selected by means of rotary selectors and direct reading dial, are provided for the table cross movements.

Like all other Giddings & Lewis Machines the 70 Series Planer Type machine can be furnished with accessory equipment, such as built-in thread lead



device, continuous feed facing head, revolving tables, and special milling attachments. In addition, the Planer Type Machine may be purchased with or without end support, depending entirely upon the work for which the machine is planned.

A single 15/40 H.P. 450/1200 R.P.M. motor drives the entire machine. Full information should always accompany your inquiry giving the voltage, direct or alternating current, and if the latter the number of phases and cycles. These motors cannot be made the reconnecting type and must be furnished for a single voltage.

For further information ask your nearest dealer for a complete bulletin on this machine.

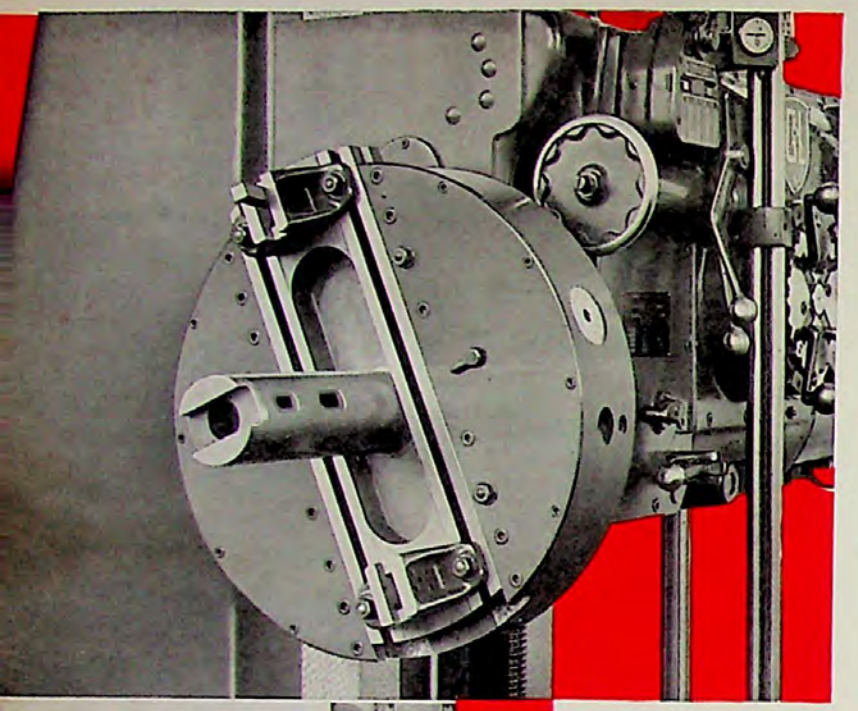
SPECIFICATIONS — Planer Type — Standard

STANDARD PLANER TYPE	780-P	
SPINDLE DATA	Main Spindle	High Speed Spindle
Diameter	8"	3½"
Longitudinal travel	72"	18"
Range of speeds (RPM) (36)	1 to 60 3 to 180	4 to 240 12 to 720
Range of feeds (per rev. of spindle) (18)	.010" to .500"	.002" to .125"
Optional range of feeds (per rev. of spindle) (18)	.005" to .250"	.001" to .062"
Maximum distance table top to spindle centers	96"	111"
SPEEDS AND FEEDS DATA		
Range of milling feeds to all units (18)	Low .2" to 10" per min. High .58" to 30" per min.	
Rapid traverse to all units	40" and 120" per min.	

	780-P
MACHINE DATA	
Working surface of table	84" x 204"
Cross travel of table	168"
Bed dimensions	372" - 47" Vee Centers
Multiple motor drive	Suitable H.P.
Maximum distance spindle sleeve to end support	198"
Horizontal travel of column on runway	60"
Horizontal travel of end support on runway	48"
Approximate domestic shipping weight of standard machine	175,000 lbs.

We are prepared to furnish machines with larger working ranges to meet specific requirements.

CONTINUOUS FEED FACING & BORING HEAD



The Giddings & Lewis Machine Tool Company's Continuous Feed Facing and Boring Head is, perhaps, the most flexible all-around accessory it is possible to use with a Horizontal Boring, Drilling and Milling Machine. These Heads are made to be used with almost any size and type of machine in the G&L line.

Among the many features of this attachment are:

Tool Slide — has six separate power feeds in either direction ranging from .009" to .118" per revolution of Head.

Machine spindle is free to pass through the attachment—may be used for separate or simultaneous operation.

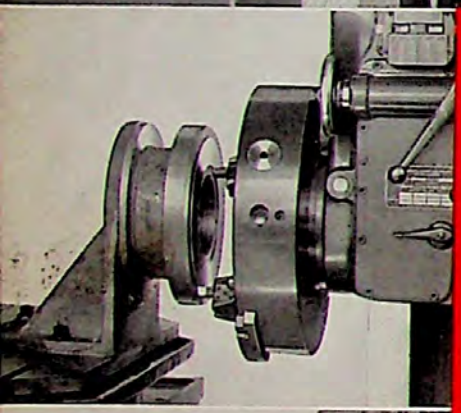
Micrometer adjustment of tool slide to .001".

Two facing tool holders accommodating ¾" square tool bits — are standard equipment.

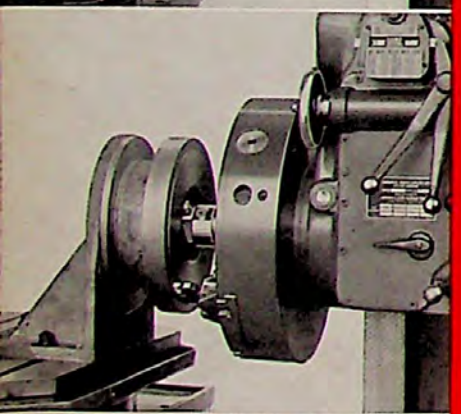
Directional Control — Tool slide control lever points in direction of tool slide travel when attachment is rotating in normal direction. Lever is neutralized for boring.

(For complete details on this attachment, see your nearest dealer for our special bulletin).

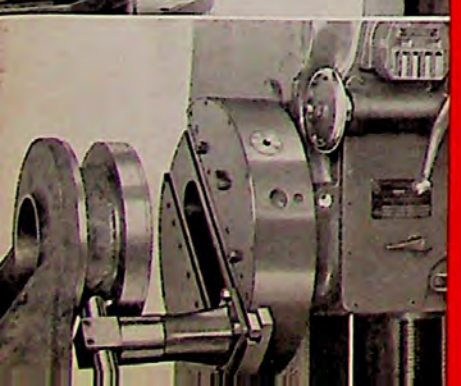
Because of its unusual design and construction, this attachment can be used for doing a number of jobs not ordinarily done on a Horizontal Boring, Drilling and Milling Machine. Some typical examples of operations are shown at left.



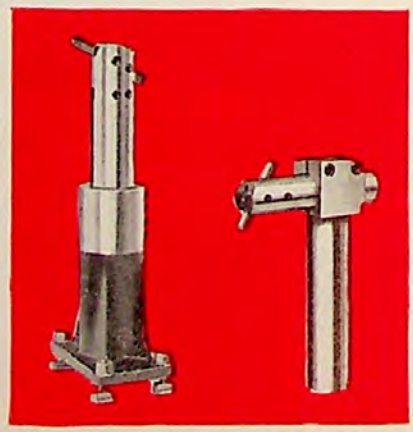
(Top) Facing operation using two tools for roughing. Finishing cut may be taken with single wide face tool using the maximum feed of the attachment.



(Center) Facing and boring operations being performed at the same time. Boring operation is performed using the spindle feed of the machine independent of the facing attachment.



(Bottom) Backfacing operation showing the application of the telescopic tool. The cutting tool may be turned 180° for machining the opposite face.



Telescopic tools (right) used for a variety of operations. (See illustration bottom left). These tools and others are designed to meet special requirements.

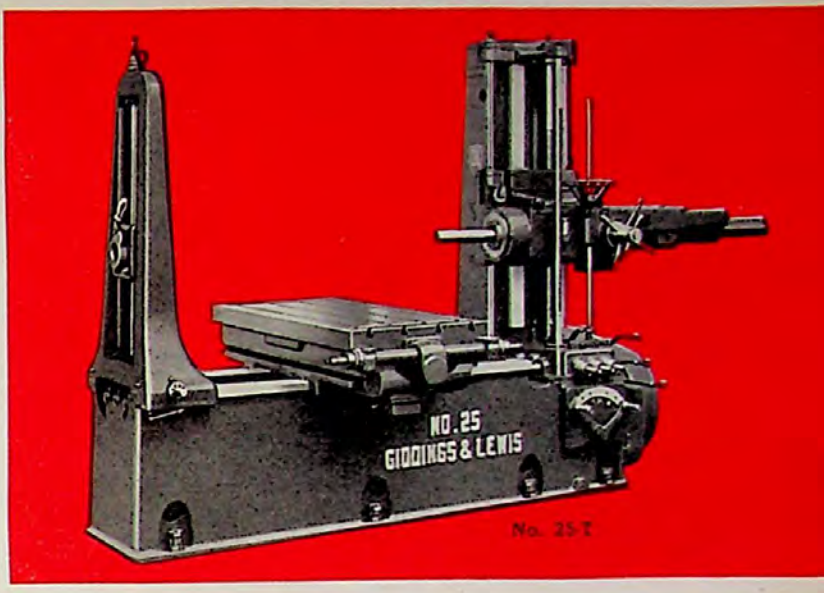
GIDDINGS & LEWIS MACHINE TOOL CO.

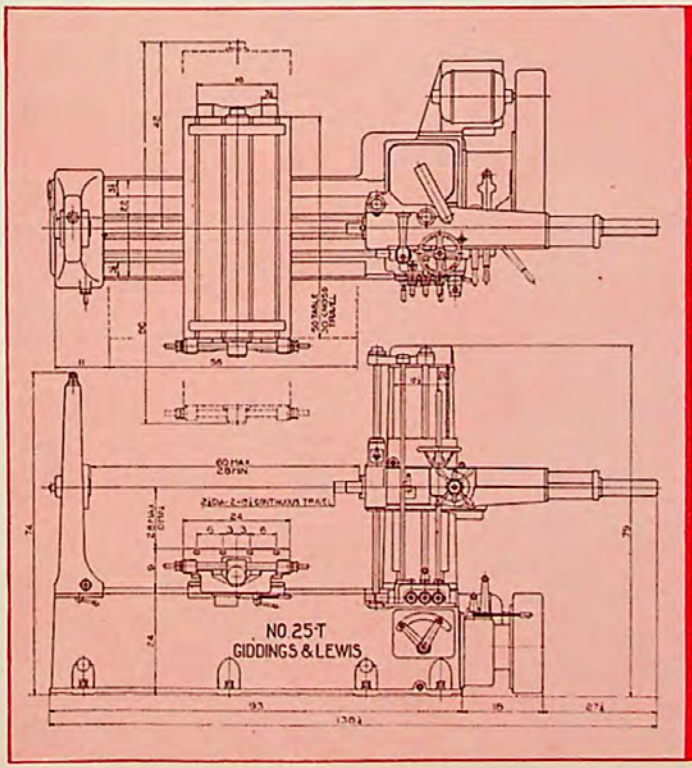
No. 25 TABLE TYPE . . . Standard

We brought out the No. 25-T and No. 25-RT Machines to meet an ever increasing demand for a machine tool to handle a variety of small Horizontal Boring, Drilling and Milling jobs. This particular field, which requires a relatively rangy yet light and simple machine, has been sadly neglected. There has been a wide gap between the small knee-type milling machine and the modern, highly developed Horizontal Boring, Drilling and Milling Machine. There are a great many operations both in the tool room and in the production shop on relatively light pieces that require the accurate spacing of holes over a fairly wide range; or the milling of pads, or surfaces, whose spread is such that it is impractical to do the work on a small knee-type milling machine.

With its precision spindle mounted in a headstock with 28" vertical adjustment and with a table with a working surface 24" x 48" and a cross travel of 30", this machine bridges the gap between the knee-type milling machine, small special boring machines and our standard 3" bar types. This machine is built to the same limits of accuracy as our larger machines; and on work within its capacity will perform operations with equal efficiency. The headstock and table cross movements are supplied with scales and adjustable verniers so that accurate settings may be made for boring operations. A cutting lubricant system may be provided, and when the machine is equipped with the G&L 17" diameter Continuous Feed Facing Head, it becomes one of the most versatile, all-around Horizontal Boring, Drilling, Milling and Facing Machine on the market today.

For further information, ask your nearest dealer for the complete bulletin describing this machine.

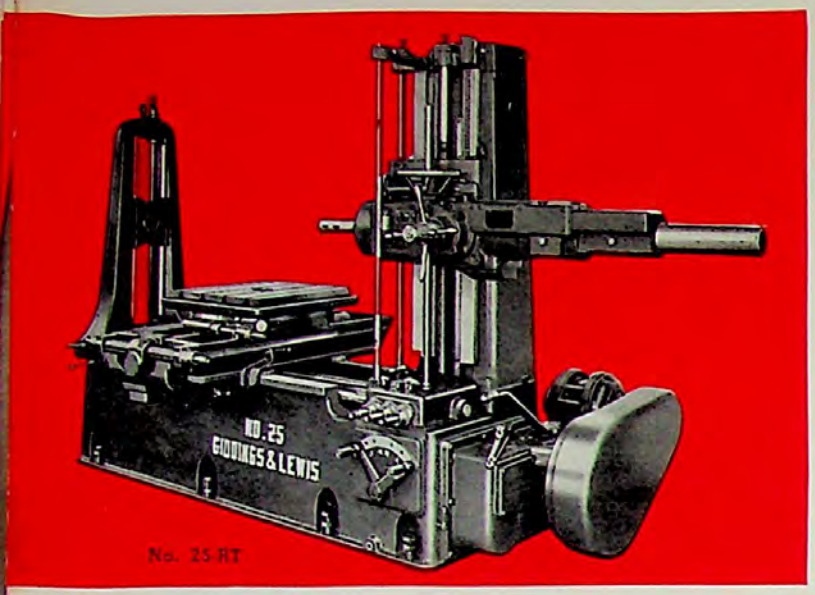




SPECIFICATIONS — Standard

Diameter of spindle	2½"
Morse taper of spindle	No. 4
Longitudinal travel of spindle	27" (2x13½")
Number of speeds to spindle	8
Range of speeds to spindle	15 to 400 RPM
Number of feeds to all units	9
Range of feeds (per revolution of spindle)	.005" to .250"
Max. distance table top to spindle center	28"
Min. distance table top to spindle center	0"
Distance table top to bed ways	9"
Working surface of table	24" x 48"
Cross travel of table	30"
Max. distance spindle sleeve to end support	60"
Min. distance spindle sleeve to end support	28"
1200 RPM constant speed motor	5 H. P.
Width of bed over ways	22"
Width of ways on bed	3½"
Width of column over ways	12½"
Width of ways on column	2½"
Approximate domestic shipping weight of standard machine	8,700 lbs.

No. 25 TABLE TYPE . . . Revolving Table



No. 25-RT

Whenever more than one surface (with several angles) must be presented to the bore spindle or to a milling cutter mounted thereon, a rotary table is indicated. An indexing or rotary table may be placed on top of the plain table or may be built into this table to form an integral part of the machine. We offer the No. 25-RT Machine for this class of service.

The total elapsed time on any job is made up of loading and unloading time, machine operating time and the time required to remove metal. When the work is mounted on a rotary table of the sort shown, it requires no more time to clamp it in position for several operations than for one. The indexing of the table requires but a moment and can be accurately done by means of the calibrations and the dial indicator. A substantial saving in time can be made as the setup can be spread over several operations.

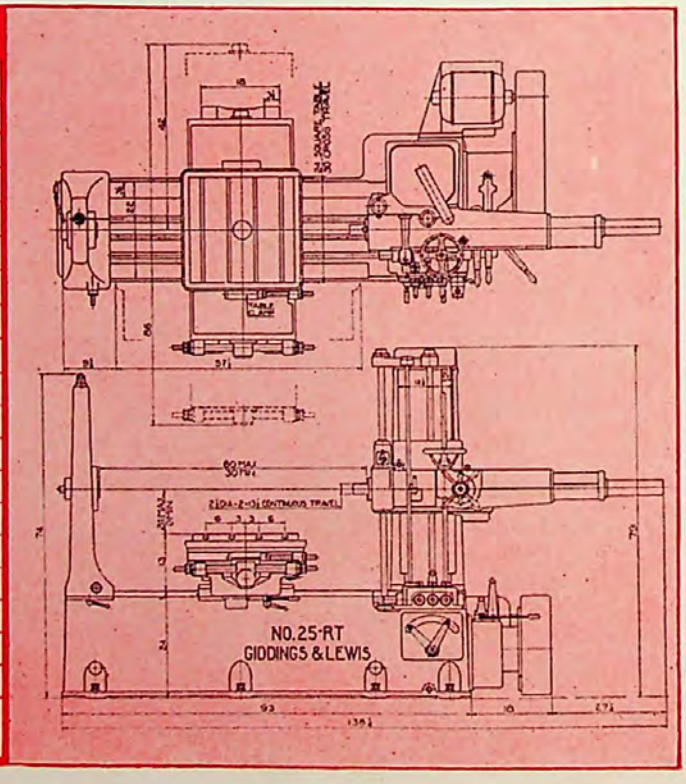
Another method of gaining the advantage of a rotating or indexing table is to load a second piece while the first piece is being operated upon. In this way, all loading time is eliminated and the time between operations is cut down to the simple indexing time. The demand for more and more production makes it imperative to employ these devices for reducing costs and obtaining a maximum output at a minimum cost.

This machine is in all respects a duplicate of the No. 25-T shown on the previous page except for the substitution of the rotary or indexing table. The addition of this element reduces the maximum vertical height between the top of the table and spindle center from 28" to 24". All other functions and ranges of the machine remain the same.

For further information, ask your nearest dealer for the complete bulletin describing this machine.

SPECIFICATIONS—Revolving Table

Diameter of spindle	2½"
Morse taper of spindle	No. 4
Longitudinal travel of spindle	27" (2x13½")
Number of speeds to spindle	8
Range of speeds to spindle	15 to 400 RPM
Number of feeds to all units	9
Range of feeds (per revolution of spindle)	.005" to .250"
Max. distance table top to spindle center	24"
Min. distance table top to spindle center	0"
Distance table top to bed ways	13"
Working surface of table	24" x 24"
Cross travel of table	30"
Max. distance spindle sleeve to end support	60"
Min. distance spindle sleeve to end support	30"
1200 RPM constant speed motor	5 H. P.
Width of bed over ways	22"
Width of ways on bed	3½"
Width of column over ways	12½"
Width of ways on column	2½"
Approximate domestic shipping weight of standard machine	9,000 lbs.



No. 45 TABLE TYPE . . . Standard

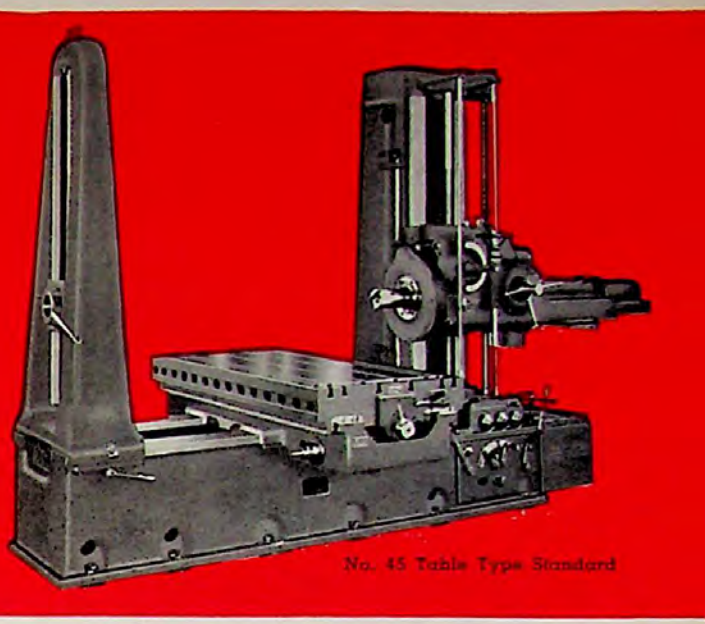
In a great many plants, there is work to be done that does not require the highly developed machines exemplified by our 30, 50 and 70 Series Two-spindle Design.

In meeting the present emergency and great demand for 5" bar machines, we brought out the No. 45-T Machine shown on this page, which is built in two sizes only—Standard and Oversize. This machine is of the conventional single spindle design with a minimum of feed and speed changes to meet the limited requirements of a sturdy, accurate tool to supplement the highly developed machines mentioned above.

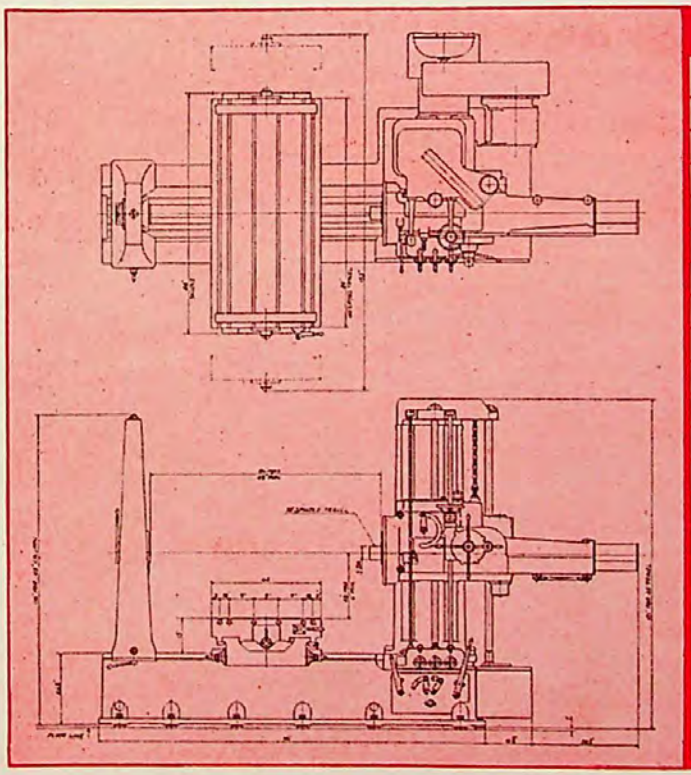
In the building of almost any product, there are operations on certain pieces which can be performed with economy on the simplest type of machines. For the most part, these operations are of a simple nature although they may require equal accuracy and the ability to remove the stock in the shortest possible time. We believe that the No. 45 Machine meets these requirements exactly.

The machine is of a heavy, sturdy design and is capable of removing metal up to the total horsepower of the motor recommended. Anti-friction bearings and an adequate oiling system guarantee a long life and a minimum cost of upkeep. All of the main castings are adequately ribbed and are of box type construction. All sliding surfaces are adequately gibbed and suitable clamps are provided for locking the major units in position while performing precision boring operations. The spindle is started, stopped and reversed through a twin disc clutch which also allows the machine to be used for tapping. The best of materials are used throughout and the workmanship is up to the usual Giddings & Lewis standard.

For further information, ask your nearest dealer for the complete bulletin describing this machine.



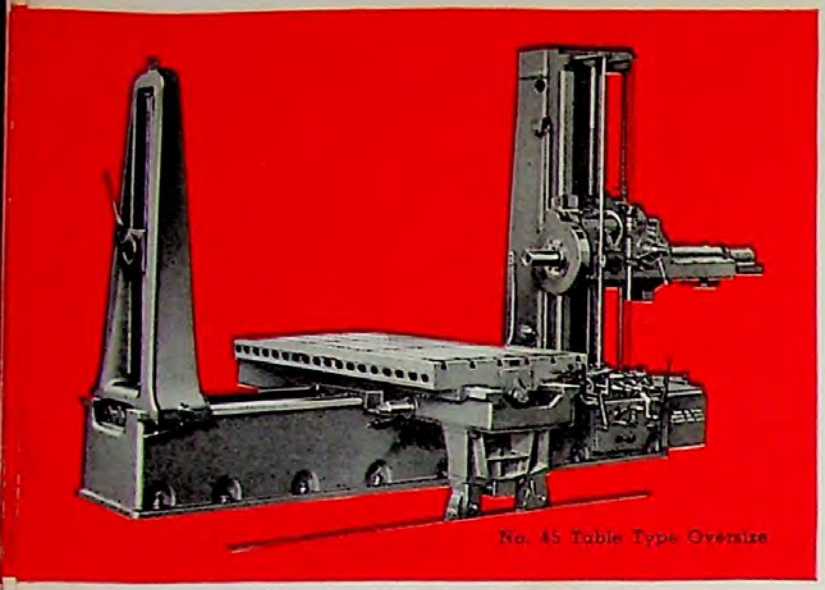
No. 45 Table Type Standard



SPECIFICATIONS — Standard

Diameter of spindle	5"
Morse taper of spindle (nose drive)	No. 6
Longitudinal travel of spindle (single set)	32"
Number of speeds to spindle	12
Range of speeds to spindle	7 to 220 RPM
Number of feeds to all units	18
Range of feeds to all units (per rev. of spindle)	.004" to .648"
Max. distance table top to spindle center	48"
Min. distance table top to spindle center	0"
Distance table top to bed ways	13"
Working surface of table	40" x 84"
Cross travel of table	60"
Max. distance spindle sleeve to end support	84"
Min. distance spindle sleeve to end support	43"
Rapid traverse to all units	65" per min.
1200 RPM constant speed motor	20 H.P.
Width of bed over ways	36"
Width of ways on bed	8"
Width of column over ways	20"
Width of ways on column	4½"
Approx. domestic ship. wt. standard machine	33,000 lbs.

No. 45 TABLE TYPE . . . Oversize



No. 45 Table Type Oversize

In order to meet the demand for a machine of large capacity, we also furnish the No. 45-T Machine with extended saddle, saddle supports and auxiliary runways which give full support for the complete cross movement of the large table.

The auxiliary runways and saddle supports are exclusive Giddings & Lewis features. Separate leveling means are provided for each of the auxiliary rails and a wedge type adjustment is provided for each saddle support. By these means, it is possible to maintain the machine in absolute alignment throughout its entire range. Also, due to the support outside of the base of the machine, it is possible to move the table in either direction to its full cross travel without placing a twisting strain on the main bed ways. This is the only successful method of obtaining accurate work throughout the full range of a Table Type Horizontal Boring, Drilling and Milling Machine. Furthermore, this method does not require the use of an extremely wide bed which interferes with the normal operation of a machine of this type when operating on relatively small jobs. It is also obvious that this type of construction allows a maximum of rigidity with a minimum of weight.

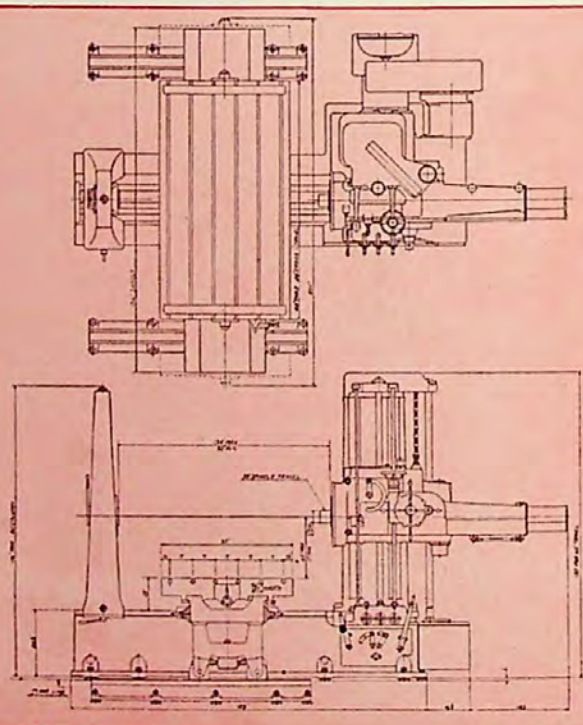
For further information, ask your nearest dealer for the complete bulletin describing this machine.

Giddings & Lewis No. 45 Machines are available with two working ranges only. The specifications given on the previous page and below indicate briefly the specifications for each working range, and no special ranges or combinations other than those given can be furnished.

SPECIFICATIONS — Oversize

Diameter of spindle	5"
Morse taper of spindle (nose drive)	No. 6
Longitudinal travel of spindle (single set)	32"
Number of speeds to spindle	12
Range of speeds to spindle	7 to 220 RPM
Number of feeds to all units	18
Range of feeds to all units (per rev. of spindle)	.004" to .648"
Max. distance table top to spindle center	60"
Min. distance table top to spindle center	0"
Working surface of table	52" x 108"
*Cross travel of table	84"
Max. distance spindle sleeve to end support	132"
Min. distance spindle sleeve to end support	55"
Rapid traverse to all units	65" per min.
1200 RPM constant speed motor	20 H.P.
Width of bed over ways	36"
Width of ways on bed	8"
Width of column over ways	20"
Width of ways on column	4½"
Approx. domestic ship. wt. oversize machine	43,000 lbs.

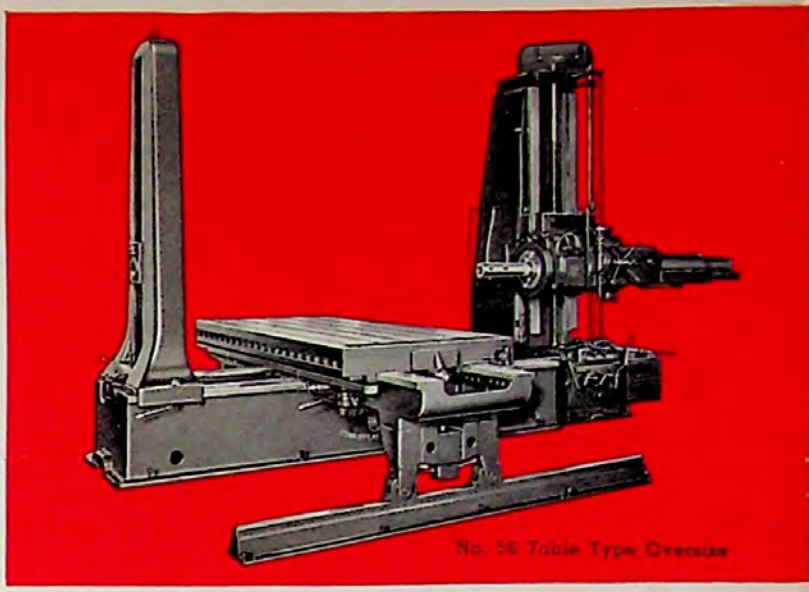
* Extended 136" saddle supports and auxiliary runways.



No. 56 TABLE TYPE . . . Standard & Oversize

Throughout industry there is a considerable amount of work that does not require the wide feed and speed ranges of the highly developed Horizontal Boring, Drilling and Milling Machines included in our 30, 50 and 70 Series lines. This work is of such nature that it can readily be performed on a simplified horizontal, yet the work is also of such nature that it requires a sturdy, accurate tool of considerable capacity. To meet this requirement, we provide the No. 56 Machine with a 6" diameter spindle and obtainable with various bed lengths, column heights and table sizes. (See specifications).

The No. 56 Machine is of a heavy, sturdy design and is capable of removing metal up to the total horsepower of the motor recommended. Anti-friction bearings and an adequate oiling system guarantee a long life and a minimum cost of upkeep. All of the main castings are adequately ribbed and are of box type construction. All sliding surfaces are adequately gibbed and suitable clamps are provided for locking the major units in position while performing precision boring operations. The spindle is started, stopped and reversed through a twin disc clutch which also allows the machine to be used for tapping. The best of materials are used throughout and the workmanship is up to the usual Giddings & Lewis standard.



No. 56 Table Type Oversize

For further information, ask your nearest dealer for the complete bulletin describing this machine.

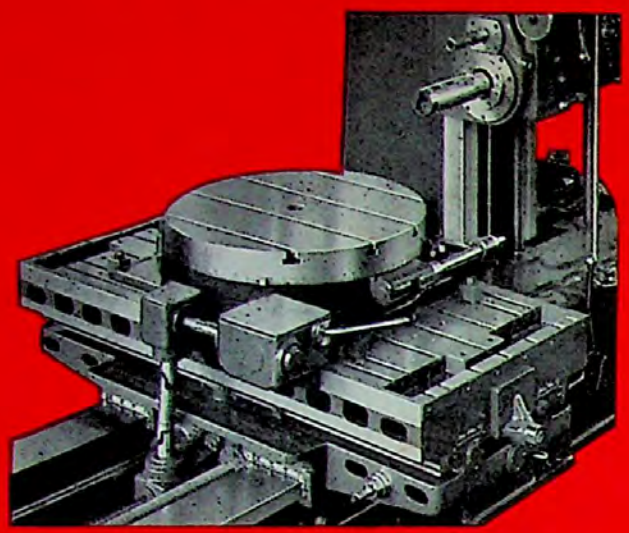
SPECIFICATIONS — Standard

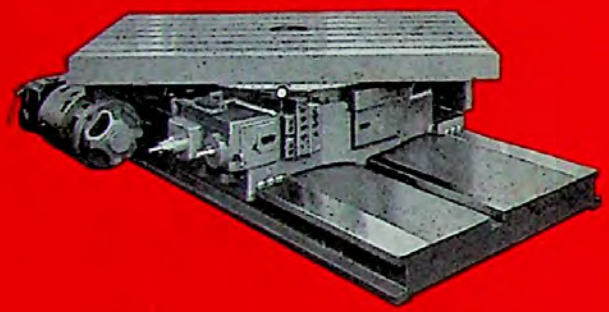
Diameter of spindle	6"	Distance table top to bed ways	16"
Morse taper of spindle (nose drive)	No. 7	Working surface of table	60" x 96"
Longitudinal travel of spindle (single set)	48"	Cross travel of table	84"
Number of speeds to spindle	24	Max. distance spindle sleeve to end support	120"
Range of speeds to spindle	4 to 200 RPM	Min. distance spindle sleeve to end support	62"
Optional speeds to spindle	5 to 245 RPM	Rapid traverse to all units	60" per min.
Number of feeds to spindle	18	1200 RPM constant speed motor	20 H.P.
Range of feeds to spindle (per rev. of spindle)	.004" to .648"	Width of bed over ways	48"
Number of feeds to all units	18	Width of ways on bed	12"
Range of feeds (per revolution of spindle)	.004" to .648"	Width of column over ways	26"
Max. distance table top to spindle center	72"	Approximate domestic shipping weight of standard machine	56,000 lbs.
Min. distance table top to spindle center	0"		

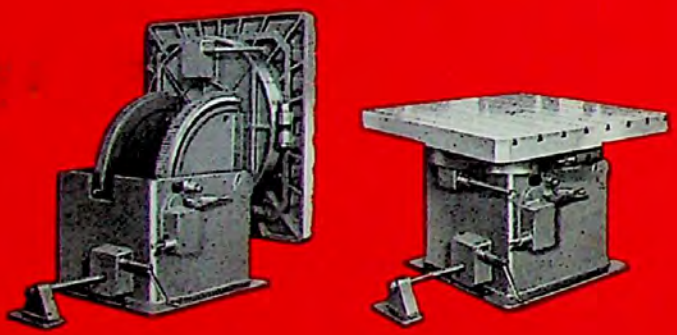
SPECIFICATIONS — Oversize

BEDS	144" - 168"
COLUMNS	84"
TABLES	60" x 96" with 84" cross feed (may be furnished with 156" saddle*). 60" x 120" with 108" cross feed (180" extended saddle*).

* Extended saddle, saddle supports, and auxiliary runways.







AUXILIARY REVOLVING TABLES

Giddings and Lewis Machine Tool Company manufactures several different types of auxiliary revolving tables. They vary in size from 24" in diameter up to and including 60" x 96" rectangular. Tables may be obtained in either the plain, hand feed, power feed, or in combinations thereof. Each table is graduated in one-half degrees, and suitable clamping arrangements are provided. The table illustrated at top left is a combination plain, hand and power feed revolving table as shown mounted to the conventional plain table of a Giddings and Lewis 30 Series Machine.

POWER REVOLVING TABLES

Two different power revolving tables are manufactured by Giddings and Lewis Machine Tool Company for use with floor type machines. They vary in weight from 20,000 to 55,000 lbs. Each of these models is provided with separate motor drives and power feeds, and table platens can be furnished varying in size from 5' in diameter to 8' x 12' rectangular. These tables are precision equipment and capable of handling large bulky work with ease. The table shown second from the top at the left is a Giddings and Lewis power revolving table with a five foot wide runway and with a platen 5' x 8'. This type of table is recommended for loads up to ten tons. A larger table, very similar in appearance but having a seven foot wide runway, is recommended for loads up to twenty-five tons.

UNIVERSAL TILTING AND REVOLVING TABLES

The Giddings and Lewis Universal Tilting and Revolving Table makes it possible to carry the work on a revolving surface parallel to the floor, and in the same position as that of an ordinary revolving table; or the platen of the table may be tilted to any point within 90° inclusive. The table stands approximately 41" in height, and is supplied with complete graduations in ½°. A turret type clamp is standard equipment as well as a 12" "in and out" adjustment. The table may be supplied with a 48" square platen, a 48" x 60" platen, or a 60" square platen. Two views showing the table platen in the normal and tilted position may be seen at left.

AUXILIARY TABLES

For milling and boring the ends of particularly long castings it is advisable that these castings should be supported not only by the machine table proper, but by means of auxiliary tables, such as shown at the bottom left. These tables are obtainable in two styles — plain, or with a sliding platen. Either type is readily placed on and removed from the machine.

VERTICAL MILLING ATTACHMENT

This unit is available for each of the 30 Series Table Type Machines. It is used for milling and consists primarily of a simple adjustable milling head, driven from the headstock proper of the machine, provided with thirty-six speeds from 8.3 to 500 R.P.M. The machine and attachment spindle are free to work simultaneously or independently. Quill adjustment is provided for cutter setting, and the usual procedure is to set the vertical spindle for height, and to feed and traverse the work, using the table and saddle movements. (See top right).

STAR FEED FACING HEAD

This attachment fits either a boring bar or spindle sleeve. It may be obtained in sizes operating over the following diameters: 18" - 24" - 36" - 48" - 60". See right.

SIDE AND END MILLING ATTACHMENT

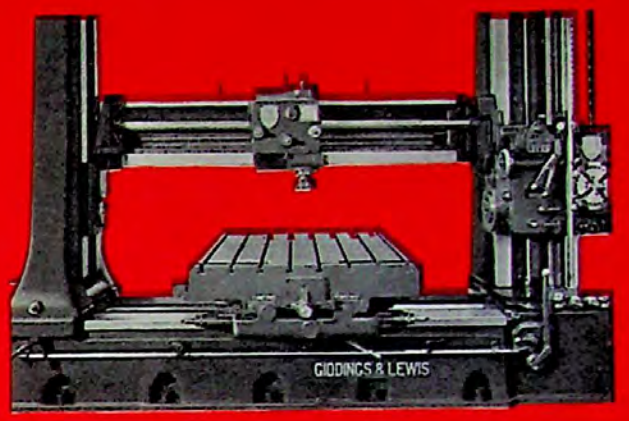
This attachment consisting of two spindles operating at right angles to each other, provides a flexible means of doing odd or unusual milling jobs. It may be set at any desired angle, and is driven by the machine spindle proper.

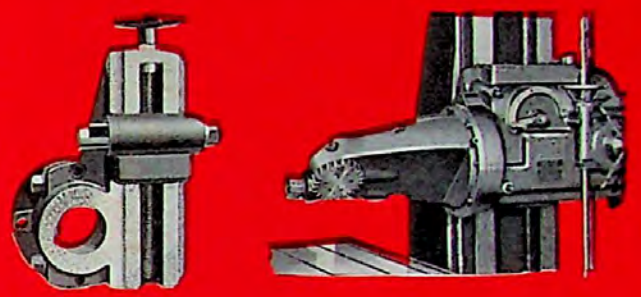
ANGULAR MILLING ATTACHMENTS

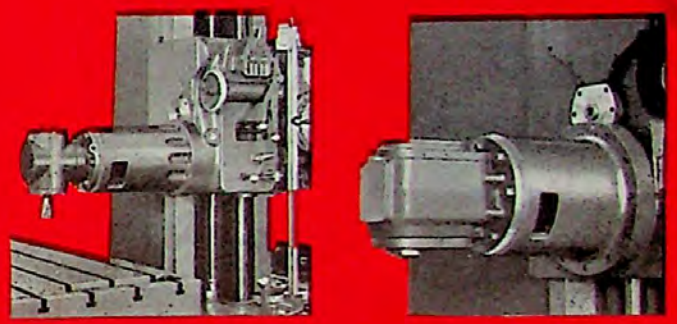
Two standard types of angular milling attachments are shown at the immediate right. The first one is a single spindle angular milling attachment furnished with a 1 to 1 gear ratio which maintains the spindle speed of the attachment at the same ratio as that of the main spindle of the machine to which the attachment is fixed. The head of the attachment is graduated and is adjustable through a complete 360°, and may be set to any desired angle. At the extreme right the heavy duty two spindle angular milling attachment is shown. This attachment is provided with a gear ratio of 1 to 4, i.e., the main spindle speeds of this attachment are approximately one-fourth of those of the main spindle of the machine to which the attachment is mounted. The attachment auxiliary spindle speed ratio is 1 to 2. The attachment is graduated through 360°, and may be set to any desired angle.

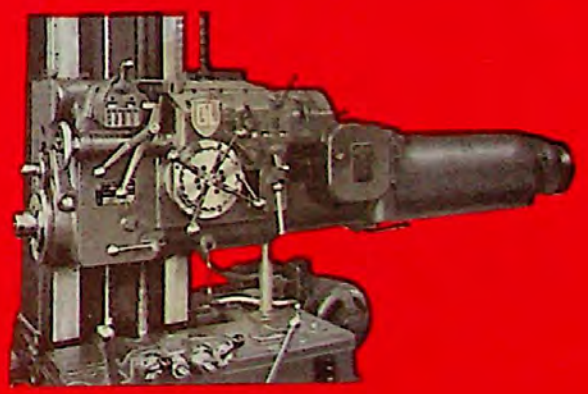
PRECISION THREAD LEAD DEVICE

This device is built into the machine as an integral part of the headstock when the machine is assembled. It provides a special precision lead screw attached to the ram and operated through pick-off gears in a special quadrant gear box. The attachment provides means of cutting precision threads. The standard set of pick-off or change gears provide leads for the following precision threads: 1 - 2 - 2½ - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 11½ - 12 - 13 - 14 - 16 - 18 - 20.









Giddings & Lewis Sales Representatives

Dawson Machinery Company
1736 First Avenue South
Seattle, Washington

Harry M. Euler Company
225 S. W. First Avenue
Portland, Oregon

Moore Machinery Company
1688 Van Ness Avenue
San Francisco, California

Moore Machinery Company
3876 Santa Fe Avenue
Los Angeles, Cal.

The Salt Lake Hardware Company
P. O. Box 510
Salt Lake City, Utah

Hendrie & Bolthoff Mfg. & Supply Co.
1635 - 17th Street
Denver, Colorado

Briggs-Weaver Machinery Company
Dallas, Texas

Robinson, Cary & Sands Co.
Fourth & Waucouta Streets
St. Paul, Minnesota

Marshall & Huschart Machinery Co.
571 Washington Blvd. at Jefferson
Chicago, Illinois

Robert R. Stephens Machinery Co.
1505 Continental Bldg.
St. Louis, Missouri

Joseph F. Dohan
P. O. Box 1154
New Orleans, La.

The Motch & Merryweather Machinery Co.
Seventh Floor - Penton Bldg.
Cleveland, Ohio

Detroit Office
2842 West Grand Blvd.

Pittsburgh Office
1315 Clark Building
717 Liberty Street

Sam H. Penny
719 Petroleum Bldg.
Houston, Texas

Canada Machinery Corp., Ltd.
Galt, Ontario, Canada

The E. A. Kinsey Company
331-335 West Fourth Street
Cincinnati, Ohio

Dayton Office
11 W. Monument Bldg.

Columbus Office
938 Cleveland Avenue

Indianapolis Office
925 N. Capitol Avenue

McVoy-Hausman Co.
2824 Sixth Avenue North
Birmingham, Alabama

George Keller Machinery Co.
1807 Elmwood Avenue
Buffalo, New York

Swind Machinery Company
Broad Street Station Building
Philadelphia, Pennsylvania

Tidewater Supply Company, Inc.
P. O. Box 839
Norfolk, Virginia

R. S. Armstrong & Bros. Co.
676 Marietta St., N.W.
Atlanta, Georgia

Farquhar Machinery Company
720-728 West Bay Street
Jacksonville, Florida

C. H. Briggs Machine Tool Co.
Onondaga Hotel Building
Syracuse, New York

Wilson-Brown Company
Room 5200 - Chrysler Building
405 Lexington Avenue
New York, New York

Wigglesworth Machinery Company
199 Bent Street
Cambridge, Massachusetts

GIDDINGS & LEWIS MACHINE TOOL CO.

FOND DU LAC, WISCONSIN, U. S. A.

PRINTED IN THE U. S. A. BY BERNDT PRINTING CO.
FOND DU LAC, WISCONSIN